

3rd European Conference on Entrepreneurship and Innovation

**The University of Winchester, UK
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Edited by
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University of Winchester
UK

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Preface

These proceedings represent the work of contributors to the third European Conference on Entrepreneurship and Innovation hosted this year by the University of Winchester in the UK. The Conference Chair is Chris Turner and the Programme Chair is Neil Marriott, both from the University of Winchester.

The opening keynote address is given by Professor David Brooksbank, University of Wales Institute, Cardiff, Wales, UK on the topic of *Development through Entrepreneurship: Thoughts on the Journey so far*.

Liz Leffman, from Clothesource, in the UK will open the second day with a keynote presentation on "*Transferable skills – adapting from large organisation employee to entrepreneur*"

A key aim of the conference is about sharing ideas and meeting the people who hold them. The scope of papers will ensure an interesting two days. The topics covered by the papers illustrate the wide range of topics that fall into this important and growing area of research. To further enhance the conference experience Professor Dan Remenyi from Trinity College Dublin will run a knowledge café to encourage networking and debate.

With an initial submission of 93 abstracts, after the double blind, peer review process there are 35 papers published in these Conference Proceedings. These papers represent research from Croatia, Denmark, Egypt, France, Germany, Greece, India, Japan, Italy, Netherlands, Romania, Russia, Saudi Arabia, Slovakia, South Africa, Spain, Sweden, UK, and USA.

I hope that you have an enjoyable conference.

Neil Marriott
University of Winchester
September 2008

Conference Executive:

Eric Bodger, University of Winchester, UK
Professor Charles Despres, Ecole Polytechnique, France
Katrina Easterling, Winchester Business School, University of Winchester, UK
Professor Alea Fairchild, Vesalius College, Vrije Univ Brussels, Belgium
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Dr Loykie Lominé, University of Winchester, UK
Professor Neil Marriott, University of Winchester, UK
Sean Pather, e-Innovaton Academy, Cape Peninsula University of Technology, South Africa
Professor Christopher Turner, University of Winchester, UK

Conference Committee:

The conference programme committee consists of key people in the entrepreneurship and innovation community, both from the UK and overseas. The following people have confirmed their participation:

Amiruddin, Ahamat (Multimedia University, Malaysia); Nigel Adams (University of Buckingham, UK); Senguttuvan Annamalai (Madha Engineering College India); Robert Atkinson (The Information Technology and Innovation Foundation, Washington, USA); Ashwini Awasthi (MLSM College, Sundernagar India); Alan Barrell (Centre for Enterprise Learning, University of Cambridge, UK); Eric Bodger (University of Winchester, UK); Benjamin Botchway (American University of Nigeria, Nigeria); John Bourne (Olin College, Massachusetts, USA); Sheryl Buckley (University of Johannesburg, South Africa); Arie Buijs (Utrecht University, Netherlands); Kevin Burt (University of Lincoln, UK); Elias Carayannis (George Washington University, USA); Yanto Chandra (University of Amsterdam, Netherlands); Paulo Rupino Cunha (University of Coimbra, Portugal); Leo-Paul Dana (University of Canterbury, Christchurch, New Zealand); Charles Depres (Conservatoire des Arts et Metiers, Paris, France); Katrina Easterling (University of Winchester, UK); Vasco Eiriz (University of Minho, Portugal); Alea Fairchild (Vesalius College, Vrije Univ Brussels, Belgium); Maria Joao Ferreira (Universidade Portucalense, Porto, Portugal); Heather Fulford (Aberdeen Business School, UK); Brendan Galbraith (University of Ulster, UK); Andrew Goh (University of South Australia, Australia); Khaled Hamid (Virginia Commonwealth University, Richmond, USA); Saskia Harkema (The Hague University of Applied Sciences, The Netherlands); Charles Hofer (University of Georgia, USA); Paul Jones (University of Glamorgan UK); Alexandros Kakouris (University of Athens, Greece); Trish Kernan (University of Winchester, UK); Fred Kiesner (Loyola Marymount University, USA); Gyeong-Min Kim (Ewha Womens University, Seoul, Korea); Sam Kongwa (Walter Sisulu University, Mthatha, South Africa); Codrin Kruijne (Utrecht University, Netherlands); Kothandaraman Kumar (Indian Institute of Management Bangalore, India); Jonathan Lean (University of Plymouth Business School, UK); João Leitão (University of Beira Interior, Covilhã, Portugal); Loykie Lominé (University of Winchester, UK); Angeline Low (University of Technology, Sydney, Australia); Sam Lubbe (University of South Africa); Neil Marriott (University of Winchester, UK); Juan Martinez (Universidad Politécnica de Cataluña, Spain); Ian McLoughlin (University of Newcastle upon Tyne, UK); Zoran Mitrovic (Cape Peninsula University of Technology, Cape Town, South Africa); Jens Mueller (Management School, Waikato University, New Zealand); Maurice Mulvenna (University of Ulster, Newtownabbey, UK); Jan Nab (Utrecht University, Netherlands); Desai Narasimhalu (Singapore Management University, Singapore); Mohand-Said Oukil (King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia); Jatin Pancholi (Middlesex University, London, UK); Shaun Pather (Cape Peninsula University of Technology, Cape Town, South Africa) Dean Patton (University of Southampton, UK); Catarina Ramalho (University of Lisbon, Portugal); Cheryl Rodgers (University of Portsmouth, UK); Enrico Santarelli (University of Bologna, Italy); Namchul Shin (Pace University, New York, USA); David Smith (Nottingham Trent University, UK); Padma Srinivasan (ICFAI Business School, India); Thomas Thijssen (University of Amsterdam, Netherlands); Milan Todorovic (Qualysoft Informatics d.o.o, Belgrade, Serbia); Marko Torkkeli (Lappeenranta University of Technology, Finland); George Tovstiga (Henley Management College, UK); Christopher Turner (University of Winchester, UK); Catherine Wang (University of London UK); Utz Weitzel (Utrecht University, Netherlands); Shaker Zahra (University of Minnesota, USA); Peter White, (YTKO Ltd, Cambridge, Cambs).

Biographies of Conference Chairs, Programme Chair and Keynote Speaker

Conference Chair



Professor Christopher Turner is a Economist and Information scientist, Chris Turner worked initially as an Information Officer at the British Institute of Management then moved into research and teaching at Birmingham Polytechnic and then Brighton University where he became Professor of Information Studies. Professor Turner has undertaken consultancy for the British Council, Post Office, Probation Service, Home Office, Citizens Advice Bureaux, a number of NHS Trusts and the World Bank; he has completed Research on Workforce Planning and Online public access systems for the British Library and has also worked on projects in India, Germany, Chile, Singapore, Greece, Malaysia, Hungary, Brazil, Kenya and Nigeria.

He has published a variety of papers as well as two monographs: *Organising Information: principles and practice* and *The Dissemination of Information* He is currently Chair of the Association for Information Management, Chair of the Hampshire and Solent Learning Hub, a member of the British Library Advisory Board, President of the North Hampshire Chamber of Commerce and a board member of a number of other research based trusts.

Programme Chair

Professor Neil Marriott BSc (Econ) (Hons) (Wales), MBA, PhD, IPFA, MILT, DipM. Neil is the Head of Winchester Business School and Hoare Chair of Business. He was formerly the Associate Dean of the Faculty of Business at Glamorgan University, where he had been Professor of Accounting and Finance since June 2000. Neil is a former management consultant for a Big 4 firm and spent eleven years at Cardiff University. His research embraces three main areas: accounting education, NHS financial management and small business financial management. His research output includes over 70 academic articles, research reports, textbooks and articles in professional journals. Neil has also presented over 50 papers at national and international conferences. Amongst a wide variety of other activities, Neil currently is the Chair of the British Accounting Association and the editor of *The International Journal of Management Education* published by the Higher Education Academy.



Keynote Speakers



Professor David Brooksbank BSc (Wales) MSc (Bristol) PhD (Wales) PGCEd FHEA MInstD. David is Director of Enterprise at Cardiff School of Management and is Professor of Enterprise, responsible for the promotion and development of enterprise activities within the School. Before joining CSM in 2008 he was Director of the Welsh Enterprise Institute at University of Glamorgan Business School in South Wales, where he led a team of thirty academics and project staff within the Department of Enterprise and Economic Development. With over sixty academic publications in his areas of research interest, David is well known across the UK and Europe for his work amongst his peer group

David has served as Vice-President of the Institute of Small Business & Entrepreneurship and is a current Board Member of Enterprise Educators UK. He sits on the 3rd Mission Committee of the Welsh Funding Council, HEFCW, and the Association of Business School's 3rd Steam Committee. He is also Vice Chairman of Venture Wales, the largest business support organisation of its kind in Wales and is a regular commentator in the local and national media. David's commercial consultancy work with the Institute has included the production of the Entrepreneurship Action Plan for Wales (for the National Assembly), as well as economic development strategies for local and national agencies. He was Co-Director of the Global Entrepreneurship Monitor project in Wales for eight years and has developed numerous EU funded projects focussed on developing a better understanding of enterprise and entrepreneurship, including a portfolio of undergraduate and Masters level qualifications in Entrepreneurship.

Liz Leffman started her career in advertising and marketing. In 1985, she became Deputy Chief Executive of Meridian Leisurewear, a division of Courtaulds, and was responsible for the management of two factories producing clothing for Marks and Spencer. Later she became Marketing and Business Development Director for Courtaulds Fabrics. In 1991, fascinated by the changes taking place in Eastern Europe, she spent a year working for Company Assistance, a Warsaw based consultancy, where she helped newly privatised garment businesses develop marketing strategies. Recognising an opportunity, she went to Romania, and set up Clothesource, a business offering management services to companies wanting to use Romanian manufacturing facilities.



Clothesource has now expanded to become a consultancy specialising in sourcing in the global marketplace. It numbers among its customers businesses such as Marks and Spencer, Tesco, New Look, and in the USA, Gap and The Limited, for whom it provides data and market intelligence, and training in global sourcing. Liz is a visiting lecturer at Westminster University, and is Chair of The Kairos Foundation, a charity providing self-esteem training.

Biographies of contributing authors (in alphabetical order)

Lise Aaboen. In the autumn of 2008 Lise Aaboen will defend her dissertation, which explores incubators, at the Department of Technology Management and Economics, Chalmers University of Technology. She currently holds the Degree of Licentiate of Philosophy from the same university. She also holds a M.Sc. in Business and a Master in Marketing Management from BI Norwegian School of Management. Her research interests include incubators, strategy and commercialization of technology- and/or design-based ideas.

Ann-Kristin Achleitner is Head of the KfW Endowed Chair in Entrepreneurial Finance and Scientific Co-Director of the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM). Her major research interests are in the fields of private equity, venture capital, social entrepreneurship and community development venture capital.

Hadia Abdel Aziz is a lecturer of Entrepreneurship and Innovation Management at the Faculty of Management Technology of the German University in Cairo. She obtained both her BA and MBA degrees from the American University in Cairo and got her PhD in the area of innovation in financial services from University of Stuttgart – Germany. Before switching to the academic career, she worked for nine years as a corporate banker in several multinational banks. Her main areas of research are entrepreneurship and innovation in service organizations.

Christos Apostolakis, Ptychio (Pireas-Greece), MA (Bournemouth-UK), MA (York-UK), Ph.D. (DMU-UK) Having acquired an academic knowledge background in Strategic and Public Management, Christos currently works for the School of Design, Engineering & Computing at Bournemouth University on research programmes in Education such as promotion of Personal Development Planning via the Learn-Higher project. He has been working for the British higher education in teaching and research since 2004. Before coming to Britain for his Masters and Ph.D. studies in 1997 he worked for both the public and private sectors in his native Greece. His interest on entrepreneurship, especially social entrepreneurship was triggered after a visit for research purposes to Newfoundland, Canada in 2007. Other research interests include: Strategy and Strategic Foresight; Collaboration, Strategic Alliances and Public-Private Partnerships; Service Quality; Evaluation of Organisational Performance. He has published a variety of articles in academic journals, chapters in books, papers in conference proceedings and reports.

Emna Baccari, PhD student, University Sophia Antipolis Nice, Laboratory CRIFP, *Diplomas*: Masters of business administration and Management Sciences option: Management, Finance and strategic control (2004). EDHEC business school / university of Toulon Var Institute of business administration (France). Licence business management option entrepreneurship and management of project (Major of promotion) University of economics and management science of Jendouba Tunisia (2003).

Marko Bender is a research assistant and doctoral candidate at the KfW Endowed Chair in Entrepreneurial Finance and the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM), since 2006. His major research interests are in the fields of venture capital, the influence of spatial proximity in venture capital financing and community development venture capital.

Reiner Braun is assistant professor at the KfW Endowed Chair in Entrepreneurial Finance at Technische Universität München (TUM). Since 2007, he holds a Ph.D. (summa cum laude) in entrepreneurship. His major research interests are venture capital, leveraged buyouts, and entrepreneurial cognition.

Luca Cagnazzo was born in 1983 in Perugia, Italy. He graduated in Informatics and Telecommunication Engineering, from the University of Perugia, and he won an aid grant for his thesis work on Innovation Management. He is now a PhD student at Industrial Engineering Department, University of Perugia. His main research interest is on the Network Management field and his research activity is financed by the Economic Development Italian Ministry. His actual activities are also focalized on Innovation Management, Business Performance Management, Knowledge Management and ICT areas

Devjani Chatterjee is presently a PhD research scholar in the department of Industrial & Management Engineering at the Indian Institute of Technology, Kanpur, India. She is a Masters Degree holder in Commerce (Finance) from the University of Calcutta. Her research interests include innovation management, performance measurement, leadership and strategy.

Jesper Lindgaard Christensen has since 1989 been a member of the IKE-research group of Aalborg University, Denmark and DRUID. His research includes various aspects of innovation theory and -policy. He has a broad knowledge on innovation surveys, industry studies, small business finance and

entrepreneurship. He is currently managing a research centre on regional development and a research project on development prospects for the Danish food industry.

Annabell Geidner is a research assistant and doctoral candidate at the KfW Endowed Chair in Entrepreneurial Finance and the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM), since 2004. Her major research interests are in the fields of private equity, buyouts, and management changes after divisional buyouts.

Oleg Golichenko, Doctor of Economic Sciences, economist and specialist in the field of national innovation system, he worked as the deputy director of Russian Institute for Economics, Policy and Law in Technology Sphere, and now he moved into research work at the Central Economics and Mathematics Institute of Russian Academy of Sciences. He is currently professor of the Chair of Intellectual Property Economics of Moscow Physics and Technique Institute (Technical University) and professor of the Chair of Institutional Economy of New Russian University. Golichenko Oleg has published 110 papers and 10 monographs. Among them there is the book "National Innovation System of Russia: the State-of-art and Perspective of its Development"

Prasoon Gupta is a Final year student of B.Tech. in Civil Engineering at the Indian Institute of Technology, Roorkee, India. After completing his high school, he was selected for this degree through the prestigious Joint Entrance Examination conducted by the Indian Institutes of Technology in the year 2005. He has had a tremendous academic career till now along with many outstanding all round non academic achievements at his college level. He has an experience of working in various big organizations like Deloitte consultants, Indian Institute of Science, etc. where he was involved in arduous research works. He has also won various national level competitions on paper presentations and holds many important positions for student bodies in his college. He has an interest in writing and is an active member of social organizations like PETA and National Service Scheme. He is currently working on his idea for a business venture and plans to start his own company very soon.

Chiapin Huang Doctorate Candidate of Business Administration (HEM), University of Bath 2005-2008. My current research centres the enquiry on the Creativity and Innovation Management. It consist of Affirming System Enquiry, Innovation Network, and Intellectual Property. Master degree of Business Administration, University of National Sun Yat –Sen University, Taiwan. 1991-1993. Employment, 2003 -Project Manager, Office of Strategy and Research Planning. ITRI, Taiwan. I work for the strategic planning part of the office for my institute.

Alexandros Kakouris studied Physics at the University of Athens (1990). He also received a Ph.D. in Physics from the same University (1997) and a postgraduate certificate on "Distance Education" from the Hellenic Open University (1999). He has been the coordinator of the Career Office at the University of Athens since May 2004, and he presently teaches innovation and entrepreneurship at the same university. His research interests concern entrepreneurship education.

Shuyu Lin After accomplishing her MSc dissertation in the University of Bath, Shuyu continues her interests in SMEs in terms of new product development of the independent designer fashion label. The aim of her PhD research is to develop a framework of the competencies required for successful new product development in the UK designer fashion industry. In detail, the research will analyse and determine both the competencies required for successful NPD and where independent designers lack specific competences, as well as the key components of the product development process in the large designer fashion houses and compare this to the operations of small scale independent designers.

Mark Lowman is Principal Lecturer in Marketing at University of Portsmouth Business School. He worked for 15 years in the pharmaceutical industry and his management experience includes senior positions in new product development, marketing and sales. Mark's research interests include; marketing in rapidly changing, innovation-intensive environments; the interaction between marketing and new product development; innovation networks; and inter-firm collaboration.

Tihomir Lukovic, born 12.11.1950 in Sarajevo. Master degree 1979 at University of Zagreb. Dr. dissertation 1994. Since 2006 Professor at the University of Dubrovnik, Head of Chair "Nautical Tourism" with lectures in Nautical Tourism, Selective Kinds of Tourism, Strategic Management, Management of Entrepreneurship, Controlling. He is Project Chief of "Erasmus Mundus" for Croatia. Many publications and books and new

Graham Manville is currently a Senior Fellow in Strategy at the University of Southampton. He began his academic career at Bournemouth University in 2000 before moving the University of Southampton in 2007. His PhD research is centred upon performance management within SMEs, and key findings have from this

work have been published widely in quality peer reviewed journals and conferences. During 2008, Graham won two major awards for his research. The first was for the “Best Knowledge Transfer Partnership (KTP) in the South West Region of the UK”, and the second was an Emerald Award for Excellence for an “outstanding journal paper”. Graham runs his own consultancy practice and is both a Fellow of the Institute of Business Consulting, and also a Member of the Chartered Management Institute.

Wilson Mutyaba Walter Sisulu University, Mthatha Campus Private Bag X1, Eastern Cape, South Africa. Present Engagement, Director and Lecturer: Enterprise Development Centre, EDC, Walter Sisulu University. Council Member: Walter Sisulu University 2005- 2006. Academic Qualification: PhD SMME Management (Sukhadia University, India)

Jan Nab is researcher and consultant at the IVLOS Institute of Education at Utrecht University. His field of research is entrepreneurship education for academics. In his consultancy emphasis is on curriculum and course development, educational design, and interdisciplinary learning. He is preparing a PhD thesis on education on opportunity recognition by science students.

Mohand-Said Oukil is a Visiting Professor at King Fahd University of Petroleum and Minerals, Saudi Arabia. He obtained his PhD in 1990 from Strathclyde University, UK. His teaching and research interest are in Management, S&T policy, R&D Management, technological innovation and entrepreneurship.

David Rodeiro has worked as a Lecturer in the Department of Business Organization and Commerce at the Business Management Faculty in the University of Santiago de Compostela (Spain) since February 2006. Previously, he had worked as a Lecturer in the Department of Accounting and Finance (2001-2005) of the same institution. He received her doctorate in Finance in 2008 with a thesis on developing and funding university spin-offs. His research interest includes higher education, venture capital, university entrepreneurship and university spin-offs.

Klaus Bruno Schebesch is assoc. Professor at the West University “Vasile Goldiș”, Arad, Romania, and scientific director of the Research Center for Innovation and Entrepreneurial Development (MERCUR) of that university. He obtained his PhD from Bremen University 1990 (on innovation-competition processes) and the Habilitation from Bremen 2002 (on computational intelligence in business applications and forecasting).

Henk Schout MA, MCC is project manager of the Centre of Excellence for Innovation & Entrepreneurship at The Hague University of Applied Science. He teaches Business Process Management in the department of Industrial Management and fronts the departmental Office for Business Relations. Furthermore, he is an experienced consultant in Strategic Corporate Communication.

Jeff Tan is a lecturer specialising in the political economy of development at the Aga Khan University Institute for the Studies of Muslim Civilisations (AKU-ISMC) in London. He has a PhD in Economics from the School of Oriental and African Studies (SOAS) and has taught in development studies at SOAS and LSE. His other areas of interest include developmental state theories, late industrialisation, poverty, privatisation, corruption and urban transport networks. He is especially interested in how political and economic factors interact and shape policies and institutions, and the impact of this on development. He has published on privatisation, including a book *Privatization in Malaysia* (Routledge 2008) and a chapter ‘The Political Economy of Privatisation in Malaysia’ in *Leading Issues in Competition, Regulation and Development* (Edward Elgar 2004) along with several working papers.

Jonathan Youngleson is holder of the UNESCO/NRF Chair in Technological Entrepreneurship at Tshwane University of Technology, Pretoria, a South African university of approximately 60,000 students, with 7 campuses spread over 3 provinces, and 7 faculties. He is located within the Faculty of Management Sciences/Business School, and teaches post-graduate entrepreneurship courses in MBA & Masters of Technology programs. He is also responsible for development and conducting research into technological entrepreneurship and innovation, and research supervision of graduate students.

Business Incubators as Networks – How and Why?

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Abstract: This paper will discuss incubators using network theory. The discussion is made from two perspectives; the inside out and the outside in. The inside out perspective uses theories of ties and their strength and embeddedness in order to show how the incubator can facilitate the new technology-based firms (NTBFs) need of ties. The incubator can facilitate ties that the NTBF would otherwise not be able to create, and that can complement its initial ties. This is done through internal networking in the incubator combined with the mediation of the business developer which led to ties outside the incubator. Conversely, the outside in perspective uses theories of clusters and knowledge externalities when discussing the incubators place in the regional network. The incubator increases the number of firms in a region which, in turn, can motivate other firms to start or locate in the region. Moreover, the incubator can also be seen as an actor that has contact and an overview of the region's other actors, as well as being an initiator of a cluster based around the university. The paper's final section discusses the view of the incubator as a network in the context of the implications of the two perspectives. It is argued that similar problems are discussed in the two perspectives in terms of how similar firms should be in order to benefit from each other. Finally, it is also argued that analyses of incubators as networks including those both inside the incubator as well as regional, would give a better view of the contributions of incubators than output measurements. The reason for this is that changes in the entire network over time can be captured together with the development of the incubators activities and capabilities as a result of the regional changes. This in turn rests on the belief that strong ties take time to develop, and that the mediation and creation of ties in, and by, the incubator will influence the network in the cluster which will simultaneously influence the conditions of the incubator.

Keywords: Incubator; network; NTBF; tie; cluster

Community Development Venture Capital – Concept and Status quo in Germany

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Abstract: In the present paper we outline the concept of community development venture capital and present an exploratory analysis of the German venture capital market. In particular, we take a close look at public and quasi-public venture capital companies that (partially) meet our criteria set for community development venture capital. Furthermore, we identify potential regional venture capital gaps that coincide with socio-economic deprivation. Areas suffering from this situation might be a starting point for implementing community development venture capital activities in Germany.

Entrepreneurial activity is an important driver of regional development. Many new ventures creating jobs and economic wealth need venture capital financing. Hence, we argue that a lack of venture capital, i.e. a regional venture capital gap, is one of the reasons for socio-economic regional disparities. We regard community development venture capital as a potential lever to fight these problems. It is the financing of businesses in order to create financial returns for investors as well as social returns. Community development venture capitalists aim to realize profits, while attaining a social impact, e.g. job creation, at the same time.

Our assessment of German players in the venture capital market reveals that some public and quasi-public venture capital companies do investments similar to community development venture capital. However, these companies do not offer real hands-on support for entrepreneurs, and real community development venture capital engagement in the country is yet to come.

Based on a general socio-economic ranking of German regions, we find that the north-eastern part of Germany is far more deprived than the rest of the country. This is not very surprising, since this represents the territory of the former socialistic German Democratic Republic. However, this area is relatively well supplied with venture capital. Nevertheless, by calculating location quotients, indicating concentrations or deficiencies of venture capital investments across regions, we identified the federal state of Brandenburg in the northeast of the country as primary potential target area for community development venture capital activities.

Keywords: Regional development, community development venture capital, regional equity gap; German venture capital market

The Role of Higher Education in Enhancing Social Entrepreneurship

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Abstract: This is a reflective paper that concerns the role of higher education in enhancing *social entrepreneurship*, as it is implemented in the context of Dorset, UK and Avalon, Canada. The cases of two universities, Bournemouth University in the UK and Memorial University of Newfoundland in Canada are used in order to mirror approaches with which higher education can enhance and enrich social entrepreneurship. Social entrepreneurship in this paper is identified as a notion of emphasising the “social” that is linked with commerciality in resolving societal issues. By utilising theoretical dimensions of social entrepreneurship the paper develops a framework in an attempt to interpret the context of the cases under consideration. In so doing, it uses the notion of *entrepreneurial orientation*.

Some of the questions the paper addresses are concerned with the commercially orientated, social welfare or mixing-the-two markets that universities in general serve regarding social entrepreneurship and, more specifically the role of Bournemouth University and Memorial University of Newfoundland respectively as drivers that may support social enterprises to maintain their value base. It also discusses the differences between the two chosen regional contexts i.e. the focus on the third sector entrepreneurship in Dorset, UK in contrast to the market-oriented entrepreneurship in Avalon, Canada. Finally, the degree of participation by the university students and members of staff is examined.

Methodology-wise the paper is based upon primary research of qualitative nature via conducting of semi-structured interviews with university students and members of staff. Additionally, collection of secondary data is used. In summarising its findings, the paper argues that the role higher education can play for social entrepreneurship in both cases is highly regarded, however there are a number of hurdles that have to be overcome. Ultimately, they are these findings that create a base for planning research on social entrepreneurship in the future by looking at cases outside the university web.

Keywords: Higher education; entrepreneurial orientation; social entrepreneurship; Bournemouth university, Dorset, UK; Memorial University of Newfoundland, Avalon, Canada

An Empirical Investigation into the Impact of Enterprise Education on Young People

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Abstract: The paper makes an empirical contribution to knowledge about the impact of enterprise education in secondary schools, and contributes to the debate on methodological practices in the evaluation of enterprise programmes. The case is made for greater use of longitudinal studies and the contribution that can be made by multivariate techniques. The current Labour leadership in the UK continues to be committed to fostering an enterprise culture through a range of initiatives, most importantly through its enterprise education strategy in schools. Evidence from the Global Entrepreneurship Monitor (GEM) for the UK has consistently pointed towards an association between participation (both voluntary and compulsory) enterprise training at school and college and early stage entrepreneurial activity. While this paper will present data on this association, the evidence base for most of these initiatives, however, is insubstantial, and the inadequacy of enterprise policy evaluations demonstrated by researchers. The aim of this research was to show how the development of an instrument to measure attitudes towards enterprise can contribute to the evidence and debate focused on enterprise education in schools. The research involved a longitudinal study of a year long Young Enterprise Company Programme in secondary schools in London. Findings showed that participation in an enterprise programme can influence young peoples' enterprise potential, though type of school, parental occupation and gender were also associated. Pupils in the study were approaching the turbulent transition period from education to employment and need to make informed career decisions, and therefore enterprise programmes need to be sensitive to the dangers of raising unrealistic expectations in young people.

Keywords: Young people, enterprise education, careers, secondary schools, Ethnic origins

Doing Business in Egypt- Beyond Government Reforms: Obstacles Constraining Local Entrepreneurship

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Abstract: Entrepreneurship is one of the most important drivers for economic growth and indicators of economic performance. Therefore, governments, especially in developing countries, are exerting tremendous efforts to boost local and international entrepreneurship and remove all obstacles that may hinder their growth.

Egypt is one of the countries that are exerting lot of efforts in this direction. Its efforts to boost entrepreneurship included simplifying start up procedures, lowering registration fees, facilitating property registration, and reducing tax burdens. As a result, it was ranked as the top reformer across 178 economies by the World Bank's "Doing Business 2008" report. These efforts, although are essential, were all heading towards the direction of reforming government regulations and facilitating new business start up procedures. Other social and environmental aspects, that may also prove to be hindering entrepreneurship were not considered or catered for. These aspects must be identified and dealt with, especially if they are considered as hindering factors by potential entrepreneurs.

This paper examines qualified potential entrepreneurs' perception of the most important obstacles that are preventing them from starting their own business. The study is conducted on MBA students who attended an entrepreneurship class and already have entrepreneurial ideas, required knowledge, and preliminary willingness to start a new business. Focus group discussions identified 13 different obstacles to entrepreneurship in Egypt, of which, six were proved to be significant obstacles through the conducted survey. These are administrative corruption, government bureaucracy, lack of transparency, lack of financing sources, regulatory requirements and costs to establish the business, and finally lack of / insufficient market data. The paper demonstrates that that the existence or the size of many of the identified obstacles is only perceptual. Thus, it concludes that the main obstacles to entrepreneurship in Egypt are lack of trust, lack of information, and lack of financing.

If the government really wants its efforts to yield, it has to see the picture from the other side, that of the entrepreneurs. It is only when the government knows what are the fears, concerns, and problems of potential local entrepreneurs and act upon them that it is going to really boost entrepreneurship and achieve its targeted economic performance.

Keywords: Entrepreneurship, Egypt, entrepreneurship obstacles

What Are The Specificities Of Family Businesses In Terms Of Entrepreneurship?

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Abstract: Research in the field of family businesses has been very important, especially in the years 80. In the past, both the academic and professional have neglected this subject. Today it is recognized as an academic discipline. The researches explore some aspects of this discipline, but there are several aspects which have not been explored such entrepreneurial family. In fact, entrepreneurship is seen as a set of behaviors to create a new company (Béchar, 1996). However, defining entrepreneurship is not so simple, Verstraete and Fayolle (2005), highlight the difficulty of having a consensus on the definition of this term. Thus, the two authors propose a paradigmatic definition that: "entrepreneurship can be defined through four paradigms: paradigm of the business opportunity, paradigm of the creation of an organization, paradigm of value creation and paradigm of innovation.

In this paper, we want to help bridge this gap through the characterization of the entrepreneurial family, opting for a multidisciplinary approach. Indeed, it will be based on the interaction between the three areas, namely: the family business, entrepreneurship and the resources based view (Sirmon and Hitt, 2003).

In the comparison of these two concepts (family business and entrepreneurship), a key issue is: What are the specificities that have family businesses in terms of entrepreneurship?

That is the issue to which this communication discuss.

Keywords: Entrepreneurship, family businesses, specificities of the family business

Innovation Management Models: A Literature Review, A New Framework, A Case Study

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Abstract: The study of a complex phenomenon such as innovation, the influences and effects of which are tangible in manifold contexts, traditionally requires the integration of different levels of analysis and the interaction among distant disciplines. The enterprise appears to be the fundamental agent of economic change; in this context innovation, by intervening in the sphere of technology, constitutes a fundamental dimension also for social change. In addition, it interacts in the circle of a complex matrix of cultural, economic and institutional factors which are the base of social and economical evolution.

In such a scenario, the research questions investigated by the authors are: “what is innovation?” [1] and “how can innovation be managed inside a firm?” [2].

Literature on this matter has exponentially evolved in recent years. Nevertheless, innovation literature presents a large heterogeneity of results, while the innovation process concept itself is still poorly understood. In order to investigate the first research question, authors review the forms and structures of innovation models developed throughout the years, discussing the characteristics of literature evolution and achieving a definition of innovation.

Through the analysis carried out, a classification of the models reviewed is proposed by using the methodology of Rothwell (1992), which highlights five generations of innovation. Based on this analysis, the authors developed a new innovation model, the 3C model, which represents a step-by-step useful guide to manage innovation within a firm and is an attempt to answer the second research question proposed.

The paper concludes with a case study of three Italian companies operating in the packaging sector, where the 3C model has been adopted for managing innovation. The case study highlights in a qualitative way how the 3C model application notably increased the innovation tendency and innovation management capability of the three companies. Feedbacks coming from the case study are discussed and further improvement for the model is suggested.

Keywords: Innovation, new product development, new process development, case study, framework, systematic review

Important Differences in Management Control Systems, Cultural Dimensions and Management Practices of Innovators, Prospectors and Defenders

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Abstract: The intention of this study is to review and critique research that examines the relationship amongst business strategy, management control systems, cultural dimensions and management practices in business organizations and to consider the state of our knowledge in this area. Our study is based on a mixed strategic typology, combining 'defenders' and 'prospectors' from Miles and Snow (1978) typology and 'innovators' from Miler and Roth (1994) typology. Seven hypotheses were formed each having an underlying construct like, *interactive control system*, *diagnostic control system*, *performance measurement*, *power distance*, *uncertainty avoidance*, *empowerment and flexibility*. To test these hypotheses, data was collected from 84 companies across various sectors and sizes. Response firms are from sectors including information technology, manufacturing, recruitments etc. Then companies were classified into innovators, defenders and prospectors on the basis of their joint score on strategy and structure. Three assumptions of t-test, equal variance, normality and independent samples were verified before t-tests were carried out to compare the difference of means between these three groups. Graphically, box plots and Q-Q plots were used, whereas statistically, Levene's test and Wilk-Shapiro test were used to verify the assumptions of equal variance and the normality respectively. The findings of the study supports our entire hypotheses and reveals that I(s) use management control system interactively and consequently supports the use of interactive control system whereas defenders use diagnostic control system. In I both financial and non-financial performance measurement systems are used and they are low in power distance and uncertainty avoidance than the P(s) and D(s). It was also established in the research that workforce and management flexibility was highest in the I(s) followed by P(s) and then by D(s). The results also showed that innovators use the empowerment approach to management whereas the D(s) use the production line approach of management.

Keywords: Innovation, strategy, organizational typology, management control systems

Venture Capital – Filters, Hubs and Catalysts for Entrepreneurs? A two-sided view on financing innovative, small firms

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Abstract: A smooth functioning of capital markets is an important prerequisite for the development of new ventures. Based on existing studies and interviews with key actors in the market this paper specifies the functions of financial institutions as ‘filters’, ‘hubs’ and ‘catalysts’. It further investigates if these functions are distorted by recent trends at the capital market.

The literature on financial intermediation has frequently been split into two different strands. On the one hand, studies have dealt with the role of financial intermediation in innovation systems and the specific financial institutions that make up the financing system. However, it has rarely been discussed what is actually going on in this intermediation. On the other hand, a number of micro-level studies have focused upon the single transaction, for example exploring the (contractual) relations between investor and investee from a principal-agent perspective, or discussing the impact of information asymmetries between a lender and a borrower.

The contribution of this paper is to bridge these two approaches by discussing the nature of the intermediation process at a micro-level, whilst at the same time to investigate the impact of the development of the innovation and financial system.

Venture capital firms are particular relevant for entrepreneurs as they are acting as filters, hubs and catalysts for entrepreneurial firms. Networks are important pre-conditions for fulfilling these functions, but just as there are differences between financial institutions there are differences in the configuration and nature of the networks they use. The cost of building competences and networks are often sunk and cannot easily be reallocated to other relationships.

Recently venture capital firms in Europe have moved upwards in the size of target firms and size of investments, and size of venture capital funds, leaving smaller firms deprived of financing. As a result there is now a quantitative, pecuniary financing vacuum. Venture capital firms have over time created networks and can be denoted ‘extended knowledge bases’ that are geared towards assisting specific types of investments. Networks are thus specific to the stage of investments or industry that venture capital firms target their investments. However, this investment in building a web of complementary competencies risks being destructed by the recent trend of shifting focus of investment targets. Capital is easily moved to other target firms, networks and competencies involves time and costs to build.

Some of the implications involved are that it may be necessary to not only fill the pecuniary gaps at the capital market, but rather the bridging of relationships between actors at the market may be an important task.

Keywords: Venture capital, financial intermediation, entrepreneurship, networks, financing gap

The Innovation Activity of Russian Enterprises: Effectiveness, Factors, Bottlenecks

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Abstract: The influence of the innovation activity of Russian enterprises on social-economic development of the country is investigated. In considering the characteristics of the influence, international comparison is carried out. In the course of the comparison it was revealed that the situation was paradoxical in some aspects. It is rather unexpected that for some groups of indicators there is a strong resemblance to the situation of a number of West European countries. The paper allows one to find out the main reasons of resemblance and differences lying in the models of the innovation behaviour of Russian and European enterprises.

The factors defining the innovation activity of Russian enterprises are investigated and decomposed to clarify the reasons of the deviation of Russian enterprise activity from established standards of innovation activity in industrial developed country. The factors of the deviation are divided into the following groups. In the first group there are factors determining the conditions of the balance of stimuli and antistimuli of innovation activity. The second group includes the characteristics of innovation paradigm of Russian enterprises.

The internal and external factors of innovation activity are disclosed during the process of the building of a cause-effect chain. They are characteristics, which, on the one hand, have the significant impact upon innovation activity, on the other hand, they determinate the availability and accessibility of the entry into the activity. As a result of this analysis, one succeeded in revealing the positive and negative aspects and bottlenecks, stimuli and antistimuli of innovation activities of Russian enterprises.

The paper suggests the main directions of forming and improving the institutes and institutional instruments that could provide innovation development of Russian entrepreneurship. The proposed measures can help to eliminate the bottlenecks of the National Innovation System (NIS) and draw it out to the qualitative new level of functioning. It could give an efficiency that is close to the NIS level of industrial developed countries.

Keywords: innovation activity, stimuli and antistimuli, paradigm

Knowledge Management: Its Role in Supporting Sustainable Growth within a Service Sector SME Environment

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Abstract: This paper considers and explores the issues which arise from the development of a Knowledge Management (KM) strategy for a small knowledge intensive service organisation. The organisation has recently gone through a period of rapid growth, both in terms of head count, project variety, and geographic location. As a consequence of this growth new approaches to the organisation's KM strategy were sought. Action research was used as the primary methodology for this work. A qualitative perspective of inquiry was adopted which utilized interviews with, and a survey of, senior business managers and employees within the case organisation. Secondary data was collected through document analysis and non-participant observation of meetings.

First, the case organisation is introduced and the requirements for its KM strategy are explored. The organisational challenges of sustainable growth are identified and the role of KM in providing potential solutions is evaluated. This paper then goes on to consider the multi-disciplinary nature of KM, and how it can be optimised to improve the organisation's customer service delivery, whilst maintaining and developing internal organisational intellectual capital. Finally, a series of recommendations for the case organisation are proposed. The generalisability of these recommendations are then considered and contrasted with current literature regarding KM theory. The paper presents three major findings. First, the majority of current literature regarding KM is centred on large organisations. Second, many SME organisations do not possess the awareness of the potential benefits KM could bring to the business. Third, there appears to be a lack of KM implementation models which are relevant, and can be applied to the SME organisation.

Keywords: Knowledge Management, SMEs, Knowledge intensive services, competitive advantage, Strategic alignment

Towards Open Innovation: Reaching Out for Innovation-The Case Study of Boeing and Rohm

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Abstract: Open Innovation has been a promising trend for the last decade; the successful stories of Cisco, IBM, and P&G have already shown that it can be a powerful and dramatic paradigm change (Sakkab 2002, Chesbrough, 2003b, Chesbrough, 2006a). Open Innovation aims to bring in new and valuable ideas from inside and outside the organization and subsequently produce an offering to the market (Chesbrough 2006b). It involves a paradigm change as a company moves from a rather closed innovation mode (or a more self-centred technological viewpoint) to more open one.

In this article the author will trace the contexts, idea generations, and collaboration of Boeing and Rohm, two recent successful cases of Open Innovation. By exploring these two cases, readers may understand the process and identify issues in moving toward Open Innovation. Most of the research on Open Innovation has been done in large, American, multi-national high technology or medical related companies. Boeing is also a large, American, multi-national company, but it is more capital-intensive than high technology one. Rohm, a high technology company, but it is a medium Japanese one. This paper exams the validity of Open Innovation theory in these two different contexts. The two case studies were conducted to understand the emerging networking practices of the creation process of Boeing's best selling Dreamliner 787, and the Rohm's fastest Liver Biochip Testing System. Dreamliner 787 is a radical move for Boeing; around seventy percent of the airframe is outsourced from international suppliers and manufactures. Additionally, Rohm has boldly entered the field of bio-technology an entirely new area for the company. By examining the process of creating their successful new product, the author analyzes the networking processes in each stage of innovation, from idea generation to commercialization to highlight issues and suggestions for practices and theoretical framework.

This paper will review the literature on Open Innovation, analyze and discuss the cases, recommendations are drawn for further research.

Keywords: Open innovation, collaboration, networking, case study

On Initial Implementations of Innovation and Entrepreneurship Courses: A Case Study for Undergraduates at the University of Athens

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Abstract: At the Faculty of Informatics and Telecommunications of the University of Athens, a new optional course on 'Innovation and Entrepreneurship' was attended by 222 students close to graduation. The aim of the present paper is to briefly outline the organization and the syllabus of the course and its impact to students' perceptions. Students' feedback was collected through their response to a questionnaire. The course was methodologically based on typical problem-based learning (PBL). Furthermore, blended teaching was adopted in order to compound classroom lectures with asynchronous online support of the working groups. 80 organic groups of 1 to 5 colleagues were formed. Of these projects 75% were successfully completed. The projects were conducted in consultancy with various business professionals and they were also facilitated by a virtual enterprise platform. The pedagogical approach used to teach different parts of the course and its relevance to learning theories are briefly discussed in the first part of the present work.

The second part of the article focuses on the character of the virtually emerged business activity. Many expected results related to the mean entrepreneurial behaviour in Greece, as reported by GEM surveys, were identified. For example, the number of students' initiatives towards pure technology transfer was limited compared to the rest types of business opportunities. Moreover, previous detection of the field of youth entrepreneurship under the university career office activities has revealed certain underlying beliefs and parameters that are spontaneously recognized by young people as crucially important in order to undertake entrepreneurial activity. These parameters can be categorized as either psychological or "marketistic" and as either personally or community oriented. A questionnaire was introduced in order to focus on them in combination with the opportunity identification, the initial capital of each project the overall impact of the course. Results are presented under an empirical two dimensional pattern able to illustrate the way that the specific course shifted the mean view of the students towards knowledge-based entrepreneurialism. The current empirical approach aims to contribute to possible more sophisticated measures of entrepreneurial education and to facilitate comparisons between different entrepreneurial courses. Further considerations that concern the improvement of entrepreneurial teaching and the possible connections of the present results to other relevant measurements are discussed in the last part of the article.

Keywords: Entrepreneurial education, innovation education, problem-based learning, action learning, learning organization, academic entrepreneurship

New Firm Formation and Employment Growth in Bangalore's IT Sector: The Role of Local Entrepreneurs and Multinational Firms

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Abstract: This paper analyses the growth of IT sector in Bangalore, both in terms of number of firms and employment accounted for by them. Using data collected for a five year period between 1998 and 2003, existing and new IT firms were grouped into different categories based on the pattern of ownership and the type of business activities that were carried out by them. The employment changes were also tracked in terms of each of these categories. It is shown that the while growth in number of firms is predominantly driven by the local entrepreneurs and non-resident Indian entrepreneurs, the growth in employment is driven by the subsidiaries and joint ventures of multinational firms. It is further shown that while the IT firms promoted by local entrepreneurs have shown increases in employment mainly through formation of new firms (a pattern they share with their non-IT counterparts), the subsidiaries and joint ventures of multinational firms have shown growth in employment primarily through firm expansions. In terms of type of business activities carried out by the IT firms, it is shown that the employment growth is driven mainly by the IT services and IT enabled services, and much less by the more innovative product development and IP creation activities. The significant contribution of this paper is in assembling extensive firm level data and basing the findings on such data. This paper discusses the implications of this analysis from multiple perspectives. Aspects such as the importance of FDI led entrepreneurship in promoting employment growth in developing economies, the role of multinational companies in the process of evolution of high-tech clusters in emerging economies, the difficulty of home grown entrepreneurship to initiate innovative and high growth ventures in a predominantly export oriented cluster in developing economies are discussed along with their implications for policy making.

Keywords: Entrepreneurship, firm growth, job creation, IT sector, Policy

The Money Document: Seeding Hedge Fund Entrepreneurs

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Abstract: The highly entrepreneurial hedge fund industry has grown from \$210 billion in assets under management in 1998 to \$1.54 trillion in 2006. This number is expected to double by 2011. A hedge fund is now the preferred structure for funding other new ventures. In researching how to obtain seed capital to start a hedge fund we did not uncover any published research that discusses the procedures for raising seed capital for hedge fund start ups.

This paper discusses a theoretical framework for seed capital investment in hedge fund start ups. The paper is theoretical based due to the fact that most hedge fund partnership structures and agreements are private documents. Therefore, the confidentiality agreement prevents collection of empirical data on the current best practices for raising seed capital. The framework we present called, "The Money Document," distinguishes seed capital (used for start up activities) from capital used to fund investment strategies. The paper addresses how hedge fund start ups confront the simultaneous task of raising seed capital and raising investment capital using a standardized framework. The methodology clearly shows how to manage the two sets of risk and reward to capital investors and seed capital investors (e.g. entrepreneurs). The framework allows a start up hedge fund owner to create a formalized business case that can be presented to seed capital investors to fund a new investment strategy. This document formalizes the target market analysis, project goals, budget composition, investment capital and technology requirements that are required to start a hedge fund. The Money Document integrates the well-known Stage-Gate model for stepped release of seed capital upon achievement of key business goals. Using stage gates for capital release in quantitative software is a new concept in finance. Finally, we believe this topic is important for both the future success of hedge funds and entrepreneurship since it focuses on the start up phase of hedge funds which are quickly becoming the key financiers to new businesses world wide.

This paper will allow the participants to understand the seeding stage of a hedge fund. The paper allows the participants to understand the unique financial structures of hedge funds. Academic journals are not focusing research on hedge funds so this paper will expose participants to a new research area.

Keywords: Hedge funds; investment management startup; seed capital; investment capital; algorithmic trading; financial markets

New Product Development and Commercialisation Process in the SME Fashion Design Houses

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Abstract: This paper concentrates on fashion designers' competencies in small and medium-sized enterprise (SME) fashion design houses. Specifically how they respond to the highly uncertain, extremely competitive, and the fast-changing fashion context when undertaking new product development. Focusing on integrative and dynamic competencies, it considers designers impact on a firm's performance in the new product development (NPD) process. Designers must play a dual role as creative individuals and as entrepreneurs providing a complicated situation. This paper attempts to frame a problem in the UK designer fashion industry where British based freelance designers have been praised for high levels of creativity but criticised for their lack of business sense.

In the decade, UK government and the market environment have reputations to promote creativity on the following evidence. The Department of Trade and Industry has been more active since 1997 in promoting design and innovation. Also, New Generation design bursaries, funded by Topshop since 1999 and chosen by a rotating panel of key industry figures in collaboration with the British Fashion Council, enable designers to fund the critical presentation of their collections to press and buyers at London Fashion Week. Also, London is a world-renowned centre for young talents and design education with world-class academic institutions such as Central Saint Martin's College of Art and Design.

Having explored and analysed the existing problem and potential opportunities in the UK designer fashion industry, this paper determines where independent designers lack specific competencies and the competencies required for successful new product development, namely, technological competencies, commercial competencies, market sensing capabilities, strategic mindsets, project management skills, and networking skills. These competencies are potential determinants which influence both financial performance such as sales and non-financial performance such as innovation. Finally, after gaining clearer insights into the NPD process where a designer plays multi-dimension roles as an artist and as a manager, managerial implications for the designer fashion industry are presented.

Keywords: Competencies, designer fashion, dynamic capabilities, innovation, new product development, small and medium-sized enterprises

Catching a Cold: An Exploratory Study Into the Innovation Risks of Outsourcing in Pharmaceutical New Product Development

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Abstract: New product development, which until relatively recently was a core activity within the pharmaceutical industry, is increasingly being outsourced (Howells et al., 2008). This is symptomatic of the transformation of product development towards a more decentralised, network-based and alliance-rich function. Such large-scale outsourcing can be seen as a rational response to the ever increasing costs of drug development, most notably long and expensive clinical trials. This paper examines the impact of this increase in outsourcing on the way firms manage the clinical trials process. The increasing role of Clinical Research Organisations (CROs) has dramatically changed the nature of the innovation process. CROs initially provided a limited service in clinical trials management but have gradually evolved into organisations that have expertise across a much wider spectrum of the clinical development process. The fragmentation of the innovation process, which has arisen from the increased role of CROs, creates innovation risks for the pharmaceutical companies which are discussed in this paper. These include the risk of losing vital learning opportunities that are linked to the close-coupled nature of the innovation process. In this paper we argue that pharmaceutical companies have moved from a traditional network where they have been “spiders in a web” to a new loosely-coupled network system where CROs are increasingly taking on a similar role. This paper is mainly conceptually-based but it draws on the insights that were gained from initial empirical research interviewing a number of key informants in the industry. These preliminary findings suggest the innovation risks of outsourcing in pharmaceutical new product development to be an area of substantial interest deserving of further study.

Keywords: Outsourcing risks pharmaceutical product innovation

Strategies of Regional Development; The New European Model of Entrepreneurial Development

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Abstract: Analysis shows that in all the countries of Europe, whatever their state of development, entrepreneurship, with over 55% of total employment, represents a crucial sector of the national macro-economy. Variations in entrepreneurship between countries is related to differences in their national economies, but broad similarities are clear.

The abolition of borders between the member states of the European Union is a powerful factor in the process of entrepreneurial development. It is this factor that has caused new types and forms of interconnections between both large regions and smaller areas of Europe. Many regions and locations are connected in ways that allow the emergence of shared interests and forms of production, and which create opportunities for new types of entrepreneurial activity that are becoming a central hub of regional and local development. These new types of business have caused a restructuring of the role of the state in strategic economic development. The state is increasingly becoming a global partner in development, with the particular function of the provision of logistic and infrastructure support, as well as the regulation and control of sustainable development. Regional and local self-management is taking over many of the previous functions of the state and is providing the impetus for the planning of future development. Local and regional communities are determining the models of strategic development and creating new mechanisms for the management of sustainable development.

Keywords: Regional European model of development, entrepreneurship in the macro-economy, nautical tourism as a leader in the regional economy of the Mediterranean, the example of marinas as centres of entrepreneurial development.

Entrepreneurship training and development in Eastern Cape, South Africa: Challenges and opportunities

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Abstract: One of the greatest problems facing South Africa particularly Eastern Cape Province is the growing unemployment rate and the inability of the economy to create new employment opportunities. The fundamental task of job creation and generating a sustainable equitable economic growth has been the concern of Walter Sisulu University. In order to address some of the imbalances of the past, the teaching and learning offered by the University has had to change and address the past.

The legacy of apartheid did not only constrain the development of black owned business but also hindered the participation of blacks in the mainstream economy in several ways notably;

- The confinement of blacks to racially segregated homelands, which were not only poor in terms of living standards but also lacked a dynamic business environment.
- Entrepreneurship education or opportunities for sensitizing blacks to entrepreneurship culture were non-existent.
- The limitation of property rights made it impossible for blacks to acquire property that could be used as collateral to finance loans
- Black women found it difficult to participate in business; marriage and customary laws as well as behavioral and attitudinal constraints severely affected their participation in business

It was difficult for potential black entrepreneurs to participate in industry and technology to and form meaningful partnerships with established white owned industry.

The task of redressing the imbalances of the past is not only a major challenge facing the University but is also one of the recommendations of the National Working Group for Restructuring of Higher Education in South Africa. Furthermore, it is a long term goal of the university to become a community based institution. On the other hand, like other institutions of higher learning, the university was under pressure from the government to link up with the community.

There was also another strong driving factor among some academicians at different levels within the University to start participating in outreach programs to change the perception of the University from theoretical to practical institutions of higher learning thus the University updated her vision to reflect Rural Development, Science and Technology.

During this process, Introduction to Business Management, a module in the Department of Business Management was identified as one which could be beneficial to both students and the community. It is a module which does not only exposes students to the community need but also enables students to gain further understanding of course content, a broader appreciation of the discipline and enhances a sense of civic responsibility.

Keywords: Community higher education partnership module

Measurement of the Ability of Science Students to Recognize Business Opportunities

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Abstract: This paper describes the development of an instrument measuring students' ability to recognize business opportunities. Recognition of business opportunities where others do not is one of the basic qualities of entrepreneurs, and therefore needs attention in entrepreneurship education. However, only a few studies have been published on how to teach students to recognize business opportunities. Since the recognition of business opportunities is a context specific form of creativity in entrepreneurship, creativity theories, models, techniques, and instruments can be used in education aiming at the acquisition of competencies for opportunity recognition. Based on existing models on measuring creativity and opportunity recognition the *Perception of Opportunity Recognition Ability* (PORA) questionnaire has been constructed. Reliability analysis was used to check the internal consistency of the scales. Two PORA-scales proved to be reliable: Divergent Thinking and Self-Efficacy. Correlation analysis was used to explore the relationships between the PORA-scales. There was a strong, positive correlation between the scale Self-Efficacy and three other scales: Divergent Thinking, Problem Solving Style and Handling Extrinsic Restraints. For validation the outcomes of the PORA-test have been compared with the results of the Entrepreneurial Attitude Orientation test. The results are supported by findings reported in literature.

Keywords : Opportunity recognition, perception, measurement, entrepreneurship education

“Assessing the Impact of Marketing and Organizational Innovations on Firm Performance”

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Abstract: Research and development policy has become one of the main priorities of European Union countries through the Lisbon strategy, aiming at stimulating national R&D investments in order to reach the “fatidic” 3% level of GDP. Numerous studies have used R&D expenditures as a measure for firms’ innovative capacity. While emphasizing innovation inputs and support instruments, these works did not take into account complementary innovation strategies such as marketing or organizational innovations undertaken by the firm. The theoretical literature on innovation highlights nevertheless the feedback character of innovation processes where non-technological activities play a crucial role. Therefore, the purpose of this paper is to highlight the effects of complementary innovation strategies (organizational and marketing innovations) on firms’ technological innovation (propensity to innovate and innovative performance). We test our hypotheses on the sample of the 555 Luxembourg’s firms which responded to the 4th Community Innovation Survey (CIS) in 2006.

The results strongly highlight the importance of marketing innovations as a complementary innovation activity for both the propensity to innovate and the innovative performance. This is in line with the idea that firms focusing attention on marketing initiatives are likely to have a better ability to increase customer satisfaction in comparison to competitors, to adapt successfully to changing market needs, to discover and exploit business ideas and to access new information and resources for developing new competitive products or processes - which in turn enhance their capacity to innovate. In contrast, results show that organizational innovation that firms introduced enhances only their propensity to innovate, not their innovative performance. Another important result indicates that firms engaging in knowledge management are likely to have higher ability to innovate. This tends to indicate that knowledge management strategies are associated with more flexibility, adaptability, competitive advantage and better organizational performance. The results also showed that cooperation with customers has a positive impact on performance. This is consistent with previous literature arguing that external relations with customers constitute internal organizational competencies that are crucial for firms’ performance. Overall, the paper shows that while the importance role of R&D expenditures (intramural and/or extramural) in enhancing innovative capacity and performance is largely acknowledged, other complementary strategies may be also crucial for firms’ competitiveness. The results offer some clues for policy-makers in order to favor non-technological innovations within the firm.

Keywords: Complementary, marketing, innovation, organizational innovation, performance, CIS

Technology Entrepreneurship: A Survey Analysis of Kfupm Graduates (2001-2006)

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Abstract: This paper reports on some findings from a survey recently carried out on technology entrepreneurship potentialities of graduates between 2001 and 2006 at King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia. While this country substantially invests in science and technology education and research and enhances private businesses, yet emphasis on entrepreneurship education is not evident. KFUPM, as one of the leading higher education institutions in the Gulf region, stands as a quite interesting case to examine. With its main engineering profile, it attaches much concern to the development of the national economy and the community at large. Ambitiously, it strives to produce highest quality graduates armed with knowledge, skills and capabilities to turn ideas into successful outcomes. From the survey, valuable information is obtained on entrepreneurship inclination and potentialities of KFUPM graduates. The outcome could be useful to decisions makers at KFUPM and in Saudi Arabia, as well as to researchers interested to learn about entrepreneurship in this country. The main conclusions are that KFUPM produces graduates with entrepreneurial potential; that an entrepreneurship program could add value to these graduates; and that the shift to technology-based entrepreneurship will support the efforts to make the Saudi economy more competitive.

Keywords: Technopreneurship, competitiveness, Graduates, Kfupm, Saudi Arabia

Social Networks Across the Organizational Life-cycle From Start-up Through Growth: Usage Frequency and Importance

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Abstract: There is a growing consensus in the entrepreneurship literature that forming, nurturing, and managing internal and external relational networks are critical to the success of new and small business ventures. This network of relationships is an aggregation of all interactions through membership in formal organizations and relational encounters an entrepreneur creates and nurtures with suppliers, distributors, consultants and customers, or any of a wide range of other social contacts, including friends, family, and acquaintances. Combined, social networks enhance entrepreneurial ventures through the creation of organizational assets in the form of human, market, financial, and technological capital.

Although social networking is receiving increased attention in the entrepreneurship literature, major shortcomings exist with regard to the frequency and importance of various networks across the organization life-cycle, and specifically, from start-up through growth. In particular, conceptual and empirical research is needed that investigates how entrepreneurial organizations utilize social networks such as family/friends, current and potential customers, non-competing businesses, competing businesses, suppliers, and business/financial consultants as they move from the needed competencies of launching a business to those more closely associated to managing a small firm through its growth stage. A greater understanding of these networking needs will extend the literature by highlighting how effective entrepreneurs are at transitioning from launch to growth, and how social networks may benefit this transition. Moreover, research is also needed to discover whether the social orientation of business owners (social vs. non/less social) impact the frequency and effectiveness of different types of social networks.

Findings are reported from a study of 297 Indian entrepreneurs designed to increase the understanding of how the use and importance of varied social networks change as the organization transitions along the organizational life-cycle. The results show that input from personal social networks (families and friends) are more common and more valuable during the start-up and planning stage of the organization. Exchange and communication networks become more frequent and valuable as the organization matures. The entrepreneurial orientation of the business owner regarding social networks moderated the findings.

Keywords: Social networks, social entrepreneurs, start-up stage, growth stage

Supporting Innovation with the use of a Balanced Scorecard Approach to Manage Knowledge Transfer

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Abstract: This paper considers supporting innovation through improvements to the management of knowledge within a UK Knowledge Transfer Partnership (KTP), and reflects upon the need to ensure that the knowledge being transferred is based upon Deep Smarts.

Deep Smarts are very difficult to define, and it was therefore considered that by monitoring changes within any consequential beneficial attributes associated with the Deep Smarts, through an Intellectual Capital Audit (ICA), a direct indication of successful knowledge transfer could be achieved.

As a further indication of the level of Deep Smarts exploitation occurring on an on-going basis, when the cause (Deep Smarts) can't be measured, measuring the symptoms (any apparent consequential beneficial attributes) can provide a useful indicator of progress.

So that the potential for innovation and creativity could be maximised, a generic balanced scorecard for Deep Smarts applied to KTPs was developed to be used as a tool to both determine the level of consequential beneficial attributes relating to the successful knowledge transfer, and also to assess the deployment of Deep Smarts within the delivery of a Knowledge Transfer Partnership.

Keywords: Knowledge management, knowledge transfer partnerships, balanced scorecard, deep smarts, intellectual capital audit, consequential beneficial attributes

Influence of Applied Research Funding and Incubators on University Entrepreneurship: New Evidence From Spanish Case

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Abstract: The creation of spin-offs can be used by universities to commercialize their research results. By means of this instrument, the university can contribute to the development of the local economy and to increase its revenues. However, due to the relatively recent character of the phenomenon of the University spin-offs, the empirical studies are not plentiful on the topic.

The objective of this paper is to understand why some Spanish universities are more successful than others at generating spin-offs. In order to determine the factors that influence spin-off generation, we used a sample made up of 47 Spanish Public On-Campus Universities (100% of the SPOUs) existing in 2004. Firstly, we applied the Poisson model. Secondly, after finding over-dispersion in the data, the two approximations of the binomial negative were estimated (NEGBIN I and NEGBIN II). Lastly, we compared the results obtained with the three models.

The information for this study has mainly been obtained from two sources: The Spanish University in Numbers, a summary published by the CRUE (Association of Spanish University Presidents), and a survey sent by e-mail to Technology Transfer Office (TTO) directors in January 2005.

The results showed that University spin-offs are significantly positively associated with applied nature of the research funds and the existence of university incubation services.

This study contributes to improving the existing literature in several ways. In the first place, there are no similar empirical studies about Spanish universities. Secondly, our findings provide quantitative evidence of the importance of a commercial research orientation and university support policies regarding spin-off formation. With our results in mind, people responsible for designing research policies will be able to make better decisions regarding the management of funds allocated to the promotion of these activities. Thirdly, the present study applies both binomial negative approaches developed by Cameron and Trivedi (1986).

Keywords: University spin-offs, technology transfer, funding, Poisson model, negative binomial regression

European Network of Entrepreneurship Angels (ENEA project): A European Project Targeted at Business Start-Up Tutors Funded within the Framework of the Leonardo da Vinci Programme

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Abstract: The project partners identified a major methodological gap in the support of would-be entrepreneurs within the European Union. The ENEA project focuses on identifying the traits and skills needed of business advisors and in the training of tutors of would-be entrepreneurs during the business idea development and start-up phase. Through improved assistance to potential businessmen/women it is expected that the project will boost the establishment of new companies and increase the sustainability of newly created SMEs. Thus it will contribute to improving European competitiveness. The target group for the project will be tutors and advisers to the small business community. At the start of the project the partners identified two phases to the project, phase 1 was research into the needs of a new business start-up tutor/advisor and phase 2 identifying and delivering training to meet professional standards. To first determine the needs of the project the partners initiated an international survey across 20 countries in Europe that aimed at identifying the ideal profile for tutors in new business creation. The results of the initial research survey, phase 1, were discussed initially by partners who identified the proposed ideal profile of a business start-up tutor. This ideal profile was then revised and validated through focus groups involving relevant stakeholders in each participating country. This identified an ideal profile for a business advisor/tutor and has been the basis for defining a common training path for the certification of professional tutors in new business creation, phase 2. From research by the partners in phase 1 the consortium identified six important training modules which formed the training path for the professional business advisor and business start-up tutor. The results of the survey were examined and discussed by the partners and groups of independent assessors in member states that identified basic and advanced sets of knowledge and competences required for the profession. Once again the training path was revised and validated through focus groups until a clearly defined set of training plans had been developed for each of the six modules. Partners have developed relevant training materials to be used throughout Europe. Each partner country will adapt the generic materials to suit their own particular cultural needs. The partner countries each tested and validated their developed training modules through national pilot training sessions. A final international pilot of all six training modules was conducted with participating tutors and business advisors of business start-up enterprises from each of the partner countries taking part in this group training session.

Keywords: New business creation; tutorship; provision of training

Activity Internationalization and Innovation in SME: Searching Building Blocks for Rating Models

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Abstract: For many SME innovation-centered internationalization may be the only way into sustained growth which can attract sufficient mid- and long-term financial support. Hence, we expect that it should be worthwhile, to classify SME according to whether they will be capable of accomplishing the required innovation-internationalization link. Obviously, such a risk rating cannot be obtained by solely recurring to the more traditional, finance-oriented indicators as used e.g. in models for bankruptcy prediction. In this paper we propose first steps towards constructing such a extended classification model for SME recurring to certain “group level” effects which may occur when the firms are pursuing their innovation-internationalization activities within a cluster of technologically related firms. In order to obtain some empirical motivation for such an approach, we first discuss the case of a Romanian SME cluster from the furniture sector, heavily involved in international activities and which is also exposing some readiness to innovate. We then comment on the pervasiveness of the example and we evaluate a simple mechanism for deriving the named group level effects of innovation and internationalization activities which serve as additional indicators for determining the risk class of a single SME. Finally we discuss the role and usefulness of such derived indicators within more traditional classification models and we propose extended classification models which use this structural information about the SME cluster in a consistent way. Potential applications of such rating models range from banks issuing credit to SME to decision support for SME-related economic policy. The building blocks used in this paper stem from empirical economic models, from optimization and coalition formation as well as from structure representation in classification models.

Keywords: Innovation, Internationalization, Complementary and competitive effects, Coalition and network formation, SME rating models

Creating a Pedagogical Climate to Stimulate Entrepreneurial Behaviour

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Abstract: The question whether entrepreneurial behaviour can be taught is a relevant one. Entrepreneurial behaviour lies at the basis for a choice to become an independent entrepreneur – one of the key strategic issues on the European agenda to stimulate economic growth and the creation of jobs.

In this paper we suggest that entrepreneurial behaviour can indeed be taught and developed. This should be done in a multidisciplinary, inspiring and entrepreneurial setting, using an educational model that is based on the ideas of constructivist student-centred learning. The competency-based programme developed at the Centre for Innovation & Entrepreneurship in The Hague is tailor-made to individual student demand and goes beyond the classic business school approach based on instruction. On the basis of longitudinal research that was started in September 2007 preliminary conclusions can be drawn about the relation between pedagogical climate and entrepreneurial behaviour, competencies and entrepreneurial behaviour and finally the relation between entrepreneurial behaviour and the choice to become an independent entrepreneur.

Our findings show that such competencies as self-discipline and vulnerability are positive influencers of entrepreneurial ambition. We also found negative influencers of entrepreneurial ambition in depression and inadequacy, yet interestingly also in sincerity.

Based on the findings we conclude that a constructivist student-centred approach is conducive to developing competencies related to entrepreneurial behaviour. This implies that students are stimulated to set their own goals, formulate their own targets; as it were to collect their own luggage and select their personal mode of transport for their individual journey to acquire the competencies required to become a successful entrepreneur.

In this paper issues such as the dynamics of learning are dealt with as well as some a discussion on learning paradigms. We elaborate on the programme developed at The Hague University of Applied Sciences, The Hague in The Netherlands. So far, over 150 students have participated in the programme and since February 2007 longitudinal research has taken place to establish the effects of the programme and the pedagogical approach on the development of entrepreneurialism. We then describe the research design and preliminary outcomes, to finalize with the practical consequences of implementing such a programme and review the pitfalls and potentials of this pedagogical approach in stimulating entrepreneurial behaviour and the opportunities discerned.

Keywords: Entrepreneurship, innovation, constructivist, learner-centred, education, behavioural

Entrefuge: An Empirical Study of The Entrepreneurial Orientation Among The Students of Higher Technical Education At IIT Roorkee, A Case Study

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Abstract: The concept of entrepreneurship has been around for a very long time. According to Richard Cantillon, entrepreneurs are those individuals who make the decisions about obtaining and using resources while assuming the risk of their own enterprise.

IITs are the premier technical institutes contributing towards the overall growth of the country. IITians have achieved success in a variety of professions, resulting in the establishment of the widely recognized Brand IIT. Despite the fact that a student's mind is forever buzzing with ideas and overflowing with creativity, entrepreneurship is not one of the conventional options that are expected to be found in the list of career choices of a fresh graduate. For the country like India, which has one of the highest growth rates in the world, the creation of the intellectual property is still sidelined. Indians strive towards being employed rather than self-employment.

Entrefuge, is a study which involves an empirical survey and analysis focusing on the preparation of a statistical database of the five major personality traits namely:- management & organizational skills, risk taking capability, positive thinking, vision & innovativeness, competitive & persistence; required for an entrepreneur, in the students of Indian Institute of Technology, Roorkee, India. The online survey was done on the basis of the response of 91 students to the specifically designed set of items and other feedbacks concentrating on the entrepreneurial attitude. The collected response data was quantified using statistical tools, which enabled us to draw out different comparisons and conclusions.

This study would be helpful in knowing the present stature of entrepreneurship in the best brains of India and would thus be guiding information in channelizing the efforts by different agencies and organizations towards the betterment of their services in the motivation of entrepreneurship. The project is significant in embarking an observation and knowledge driven programme establishing an entrepreneurial atmosphere in the country that requires millions of job opportunities to be created everyday to feed the mammoth population. The commercial application of the project is infinite and extends to the grass root level of the economy. The existing ideas and innovations could be further improved upon and driven to a completion or implementable stage. This study would establish the traits, which have been helpful in creating successful entrepreneurs in the country and thus imbibing a culture where innovation in knowledge and action of thought drives the economy.

Keywords: Entrepreneurial orientation, personality traits, management & organizational skills, risk taking capability, positive thinking, vision & innovativeness, competitive & persistence

The Impact of the Identity on the Internationalization Processes in SMEs – Does Origin Matter?

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Abstract: This paper examines if the identity shaped by the region does have an influence on the owner-manager's managerial behaviour. Two hypotheses have been formulated that are based on the identity theory saying that an individual's self consists of a set of different identities.

The paper is based on an empirical study following a survey strategy. The sample consisted of SMEs from Austria, Germany, Liechtenstein and Switzerland. As technique the interviewer-administered questionnaire, using the telephone, was applied. The data were collected between October 2006 and March 2007. Eventually, 79 questionnaires were available to be included in the data analysis process. The hypotheses were tested applying hierarchical cluster analysis.

The cluster analysis for the first hypothesis related to different levels of identities resulted in three clusters showing that the companies can be distinguished according to their expressive and/or instrumental behaviour. Interestingly, the third cluster is made of German SMEs only. The cluster analysis for the second hypothesis referring to different owner manager identities resulted in four clusters. Interestingly again, one cluster emerged comprising German SMEs only.

The findings provide a fruitful base for a better understanding of the owner-manager's influence on the company's internationalization process and assist in developing specific policies for different characters of owner-managers. Furthermore, it suggests that owner-managers of small countries are made of other sets of identities compared with their German counterparts indicating a different course of action in terms of internationalization. Concluding, there is evidence that owner-manager identity can be categorized based on the owner-managers' origin.

Keywords: Small and medium-sized enterprises, internationalization process, entrepreneurial identity, cluster analysis, entrepreneurship education

NOVATEK: Innovation Experience to Develop a New Methodology and Tools to Help SMEs to Produce their Technology Plan for Innovative Products

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Abstract: This paper presents NOVATEK, a research Project with the objective of developing a personalised toolkit which using a novel methodology, will help SMEs to draw up a technological plan befitting their capacity to innovate and their business strategies. Moreover, it will help the company to generate new business opportunities by means of diversification on the basis of the development of the technological innovation capacity. The final Methodology (NOVATEK) will cover aspects such as: generation of a new product (or line of products), the identification of new market niches, product personalisation and differentiation, integration and development of new technologies, etc. and combinations of several of the former.

As the Project has started in January 2008, it is expected that by the time of the presentation of this paper (September) further detailed and advanced results will be available for dissemination.

Keywords: Innovation; methodology; technological plan; diversification; road-mapping

Entrepreneurship, Innovation and Late Industrialisation: The State Creation of Entrepreneurs in Malaysia

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Abstract: Entrepreneurship is central to innovation and hence industrialisation. However, the innovation process is cumulative, increasingly undertaken within formal organisations, and characterised by uncertainty. The technological challenge facing developing country entrepreneurs attempting to 'catch up' is considerable in this context and can be supported by national systems of innovation and entrepreneurship. The efficacy of these institutions will depend on the nature of the government–business relationship and whether the state can ensure such support is contingent upon learning taking place. Malaysia's attempts to create domestic entrepreneurs demonstrate the difficulties involved, and the importance of accounting for political factors.

Keywords: Entrepreneurship, innovation, learning, industrialisation, technology, Malaysia

Academic Intreprenuership: Transition Strategies For Commercialisation Of High Volume Electronics Products In A South African University

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Abstract: Tshwane University of Technology (TUT) was established in 2004 as a new higher education institution through the merger of three previous technikons, Technikon Pretoria, Technikon Northern Guateng, and Technikon Northwest. TUT has the Vision 'to be the leading HEI (in Africa) with an entrepreneurial ethos ...'. In support of this Vision TUT has stated its Mission as to 'extend the parameters of technological innovation by making knowledge useful through focused applied research and development'.

There are several major strategies which have been introduced by the university to bring this effort to realization, and among these are the establishment of the French' South Africa Technology Institute in Electronics (F'SATIE) and its associated in-house pre-incubator Incentif. Incentif provides an opportunity for students to establish new spin-out enterprises based on technology developed in the university.

In close proximity to F'SATIE there has been established with the support of the Department of Science and Technology a Technology Station in Electronics (TSE) of the Faculty of Engineering and the Built Environment. The TSE provides for a small-scale but sophisticated state-of-the-art electronics manufacturing capability. The concept is that products developed on campus can be built up as prototypes, and then manufactured in small volume, before being transferred to a large-scale manufacturing facility. This strategy allows markets to be tested, and early stage commercialization activities to be tested before full-scale roll-out commences.

This paper looks at the manufacturing processes and challenges of a specific detailed case study of a high technology product in the energy load management sector developed with support from the Innovation Fund by a consortium including Tshwane University of Technology.

Keywords: Electronics manufacturing university commercialisation

Exploratory Case Studies of RFID Adoption by UK SMEs

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Abstract: Radio Frequency Identification (RFID) is widely predicted to revolutionise the traditional supply chain. However, focus is mainly concentrated on large organisations which seem to be more likely to adopt this technology than SMEs, and very little attention has been paid to SMEs. The purpose of this study is to create a debate on RFID deployment by SMEs. In particular, the work examines the process of RFID adoption and implementation, explores contrasting experiences with scale-up and drop-out cases, and investigates the factors which may affect the deployment.

To conduct the study, a case study approach was adopted. Two SMEs were selected, one in the textile rental industry, which scaled up operations, and the other in the container rental industry, which, despite an award-winning project, dispensed with its RFID usage. The two selected cases also represent different characteristics of RFID systems; active and passive RFID tags, different boundaries of RFID systems, and different levels of tagging. Exploration of the attributes of RFID, and the link between the context of the studied organisations and the decisions and actions made in the pre-adoption and post-adoption stages provided a focus for data gathering and subsequent comparison of the cases. The data for the case study was collected through interviews with management staff of both companies and extractions from company documents and industrial reports.

The findings of this study showed that the adoption of RFID by SMEs may relate to a number of technological, organisational and environmental factors. Perceived benefits and top management support were found to be crucial factors in the pre-adoption stage decisions, while justifiable return on investment was identified as the discriminative factor in the post-adoption stage. The study also found that SMEs involved in close loop RFID applications seemed to be capable of overcoming adoption barriers, such as a lack of internal technical expertise, and are able to incorporate RFID systems. The above findings were well supported by Rogers' Diffusion of Innovation Theory and Tornatzky and Fleischer's technology-organisation-environment (TOE) framework. However, we argue that when studying decisions in the post-adoption stage, the dynamic interaction between deployment decisions and the context where decisions are made cannot be neglected. From this perspective, a processual view for the study of RFID deployment is required. A theoretical framework is proposed to analyse these identified factors and the dynamics contained within.

This study contributes to the body of knowledge by taking an exploratory step on the research of RFID adoption by SMEs and filling the gap between theory and practice in this area. It can also help practitioners and potential adopters understand the nature of RFID and the dynamics of the process of RFID deployment.

Keywords: RFID, SME, technological innovation, supply chain, case study