

Technology Management

Quarterly newsletter of the Centre for Technology Management (CTM)

November 2005

Getting better value from technology...

Technological innovation provides the basis of many successful organisations – but it is also both time consuming and risky. How can this potential source of wealth and benefit to society be exploited more effectively?

These issues provided the focus for this year's CTM Symposium, held in Cambridge on 28-29 September, with the theme of *Gaining better value from technology*. The programme included workshops, case studies, plenary sessions and networking opportunities, offering delegates a range of insights into how technology development and associated business models are evolving.

Examples from leading technology-intensive companies were provided by Alec Cassels of IBM, Sir Robin Saxby of ARM, Andy Low of Thales and Robbert Kuppens of CISCO. Particular points of interest were the variety of business models that now exist, and the importance of companies adapting their practices over time. No one approach has remained successful without



11th annual CTM Technology Management Symposium, Downing College, Cambridge, 29-30 September



evolution. Current trends include opening up the innovation process to involve players from outside the firm, and the need to cover processes and services as well as technology.

The context for technology investment varies from country to country. The UK situation was described by Richard Price from the Treasury. The level of R&D investment by UK companies is similar to other global companies in the same sector. However, there is a need to attract investment into the UK from multi-nationals, and to develop new sectors in order to encourage smaller firms.

A delegation from GATIC (Global Advanced Technology Insertion Consortium) led by Professor Mike Radnor, described the trends affecting technology exploitation in the US, Germany, Japan and India.



Company case studies were presented by established players such as BAE Systems and Philips, and by technology-based start ups such as CDT and CSR. An insight into the role and contribution of global R&D networks was given by Kodak and Microsoft, while TTP and TTP Com discussed ways in which they exploit technology opportunity.

Workshops gave delegates the chance to hear about some of the research taking place at CTM, including technology valuation, partnerships between high-tech start ups and large firms, and value creation and capture. These small group sessions also provide good opportunities for stimulating discussion.

Professor Andy Hopper, Head of the Computer Laboratory at Cambridge University, gave some personal insights into the conditions that foster technological innovation and wealth creation, particularly in relation to his experience with businesses in the Cambridge area. Key factors were the freedom given to individuals to exploit their knowledge and the free

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Centre's design and innovation research continues to develop

CTM's research activities in the area of design and innovation continue to gain strength. During the summer, a small team comprising Finbarr Livesey from the IfM's Centre for Economics and Policy and CTM's Tim Minshall and James Moultrie won a competitive tender from the Design Council to investigate policies to support design-led technological innovation.

Innovative technologies and design

This project is closely aligned with the Design Council's 'Technology Campaign' which seeks to improve the exploitation of innovative technologies through the introduction of design skills.

The project will develop new policy recommendations for bridging the UK's innovation-invention gap through the use of design. It will include a detailed review of evidence concerning the 'gap' and an analysis of novel policies from other countries which seek to address the problem. A report on the project is due early in 2006.

The strategic role of design is the focus of another new project supported by Arup Associates. There is a growing trend for firms to consider design as a strategic resource, to present a coherent face both internally and externally, using communication, the environment, products/services, brands and information. John Stevens, one of CTM's new doctoral researchers, will be investigating how a strategic perspective on design can generate competitive advantage.

Collaborative research opportunities

Knowledge Transfer Partnerships (KTPs) and Industrial Case Awards (which provide support to research students) are two ways in which companies can be directly involved in research. Any companies interested in discussing research opportunities in the area of innovation and design management should get in touch with James Moultrie (jm329@eng.cam.ac.uk).

Engineers get to grips with roadmapping on programme for potential leaders

More than 20 young professional engineers (pictured below) spent the first weekend in October in Cambridge, on an Executive Engineers Programme.

Supported by the Royal Academy of Engineering and the Gatsby Charitable Foundation the programme is designed to provide training for outstanding engineering graduates with leadership potential.

David Probert and Rob Phaal from CTM delivered a half-day module, as part of a wider programme organised by the the Institute for Manufacturing.

Participants were shown how roadmapping can support strategy development and innovation, using the 'bicycle of the future' as an example. The engineers worked in small groups to gain experience of using the technique.



Welcome to CTM's new research students...



John Stevens will investigate the role of design as a strategic resource for organisations. John has spent 10 years in industry, including five as Head of Design for a dot.com technology company.



Dharm Kapletia will be looking at business model transformation dynamics associated with delivery of integrated solutions strategy in the defence technology sector.



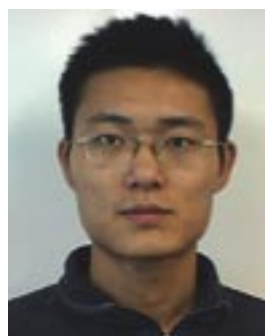
T-K Kuo, (Vincent) is researching innovation and corporate entrepreneurship. His previous research was into technology sourcing strategy for new ventures, conducted in the biotechnology industries in Taiwan.



Caren Weinberg will study the role of acquisition as a tool for growth in technology-based firms. She has an extensive international management background, with over 20 years in global computer and telecom industries.



Thomas Bohné has research interests in the diffusion and adoption of innovations and behavioural economics. His previous workplaces have included The Boston Consulting Group and Deutsche Bank.



Tao Lan graduated from Tsinghua University in China and holds a Bachelor Degree in Engineering. After graduation, he worked for Volkswagen in China.



David Bradshaw is a product planner at Ford's small car business unit. He will do part time research into the effective implementation of design innovation and new technology within established firms. David has worked in the automotive industry for 15 years.

and goodbye to...

Christian Tausend, who was working under the supervision of Dr Tim Minshall comparing university spin-outs in Cambridge and Munich.

Professor Hirohide Haga, who was an academic visitor from Doshisha University in Japan.

Award for project on consumer packaging

CTM's David Beeton (right) was recently named joint winner of the Faraday Packaging Partnership 'Associate of the Year' award.

The award was open to all undergraduates, postgraduates and post doctorates who had worked on one of the Faraday Packaging

Partnership's projects during the preceding year. It was judged on the basis of the innovative contribution made to the science and engineering underpinning modern consumer packaging. David was presented with a cash prize at a gala dinner held in York on 12 October.



Technology management research at Cambridge

- Good design practice
- New product introduction collaboration
- Strategic technology management
- R&D project selection
- Software sourcing in manufacturing
- Product planning
- Technology change
- Technology management: a process approach
- Technology selection
- Technology evolution in hi-tech firms
- Innovation management in hi-tech firms
- Technology management in software production
- Strategic make-or-buy decisions
- Industrial make-or-buy decisions
- Sustainability and knowledge management
- Technology valuation
- Technology foresight
- Technology intelligence

Conference report

PICMET 2005

The Portland International Conference on the Management of Engineering and Technology (PICMET), one of the largest such conferences in the world, is held every two years in Portland, Oregon.

CTM was particularly well represented at this year's event in early August, with seven papers covering research into alliance based business models, technology valuation, technology roadmapping, technology intelligence, software sourcing and R&D location. Rob Phaal, Tim Minshall and David Probert attended the conference.

PICMET has now expanded its activities to hold additional conferences every other year outside Portland. The next one will be in Istanbul in July 2006.

IEEE International Engineering Management Conference 2005.

The IEEE's 2005 conference on International Engineering Management was held in Newfoundland in September. Marcel Dissel and Rick Mitchell presented papers on early-stage technology valuation and the valuation and selection of small portfolios of projects. More information can be found at: <http://www.iemc2005.org>

R&D Management 2005

This year's RADMA conference was held in July in Pisa. CTM people presented six papers covering current research projects, including Nicos Raftis' work on enhancing creativity in new product development. Abstracts of all CTM papers are available on the Centre website.

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exchange between the business and academic communities.

Particular technology management issues emerging from the Symposium include:

- ways to manage the rapidly increasing information and knowledge base
- the need to improve communication between activities increasingly dispersed around the world

Technologies to watch include telecommunications, biotech, nanoscience and plastic electronics.

The Symposium attracted the largest attendance to date with over 90 participants. Many people were already expressing interest in attending the next Symposium, which will be on 21-22 September 2006.

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Diary

www.ifm.eng.cam.ac.uk/ctm/events

Nov

30	<i>Setting up and managing strategic alliances</i>	Afternoon workshop Cambridge
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Jan

19	<i>Managing innovation in small companies i: Understanding users & markets</i>	Evening workshop Cambridge
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Feb

9	<i>Managing innovation in small companies ii: Team issues</i>	Evening workshop Cambridge
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