

Technology Management

Quarterly newsletter of the Centre for Technology Management (CTM)

May 2010

'Sell out' success for CTM science festival lecture

The IfM took part in the annual Cambridge Science Festival for the first time this year. An estimated 1,000 people attended the inaugural event, entitled "Laser Fest – and more!" which was designed to showcase some of the IfM's research activities to families, and included demonstrations from the Centre for Industrial Photonics, Inkjet Research Group and a special lecture from CTM.

CTM's Dr Tim Minshall gave a talk entitled "Making the Impossible Possible", which described how engineers have changed the world. The talk looked at the role of engineering in creating humanity's greatest



visitors enjoying 'rocket racing' at the event
innovations, from putting a man on the moon to growing new body parts.

The talk proved to be highly

successful with those attending the festival. Originally it was only to be given once, but Tim agreed to offer a second, unscheduled showing after many people were unable to get in to see the first. A follow-up project designed to promote engineering and innovation to youngsters is now being planned. Downloads of slides and videos used during the talk are at: <http://www.ifm.eng.cam.ac.uk/service/events/info/2010laserfest/>

Staff from the IfM have taken part in the Science Festival before, but this was the first time the IfM had participated in the event as a whole.

CTM travels

The Centre for Technology Management seeks to establish and maintain links with relevant academic and industrial communities around the world. A few recent travels are summarised below, heading eastward.

Letizia Mortara visited Prof. Wim Vanhaverbeke in Belgium at the Vlerick Leuven Gent Management School where she gave a lecture to the MBA students on the recent research work on 'How to implement OI'. Prof. Vanhaverbeke is an expert on open innovation, external corporate venturing and the creation and management of inter-firm strategic alliances and has extensively published in the field with other scholars, including Prof. Henry Chesbrough. Among other activities he is the creator and coordinator of an Open Innovation Online resource <http://www.exnovate.org/> for practitioners and scholars in the field.

Rob Phaal visited Prof Martin Mohrle at the University of Bremen in March to discuss the production of a new book on roadmapping. Building on a series of previous books aimed at the German market, the intent is now to extend this to reach a more international audience in English.

Tim Minshall gave a keynote address at the 2010 Cluster Conference on Tokyo in January. His talk was on the topic of 'Developing Internationally Competitive Clusters' and was focused on the ways in which open innovation can support cluster development and visa versa. The conference, which attracted over 400 managers and policymakers, was run the

Japan Industrial Location Centre, and sponsored by Japan's Ministry of Economy, Trade and Industry and the Ministry of Education, Culture, Sports, Science and Technology. Tim Minshall and Johann Napp also travelled to Kyoto in March to contribute to a conference and doctoral workshop organised by the Institute for Technology, Enterprise and Competitiveness (ITEC) at Doshisha University.



Rob Phaal also visited Japan recently, to contribute to a technology management masters programme at the Japan Advanced Institute for Science and Technology (JAIST) in Tokyo, coordinated by Prof Yasuo Ikawa. This year Rob extended his trip to include a visit to Fujitsu Research Laboratories, before travelling south to Kyoto to run a training course at Ritsumeikan University, organised by Prof

Shotaro Kohtsuki. He also visited Beppu to deliver a seminar at the Ritsumeikan Asia Pacific University, hosted by Prof Masanori Namba. APU has an international mission, with approximately half of the students come from overseas, with all lectures delivered in both English and Japanese.

New CTM books

As well as journal and conference papers, books form a core part of CTM's dissemination strategy. Recent publications include:



- 'Roadmapping for strategy and innovation', recently published by IfM, providing the first comprehensive account of a technique that is now widely used at firm and sector levels.
- 'Technology management – activities and tools', recently published by Palgrave, in collaboration with Prof Dilek Cetindamar of Sabanci University, aimed at the educational market.
- Chinese translation of the T-Plan roadmapping guide by Prof Su Jun, in collaboration with the US Industrial Research Institute and Tsinghua University Press, published in September 2009, with more than 3,500 sales to date.

Visualising strategy

The Visual Strategy Network is a community of interest in roadmapping and related visual techniques for supporting strategy and innovation. CTM hosted a network meeting in February, with the aim of exploring how visual objects are used to depict strategy in roadmaps. A selection of 10 diverse specimens were examined in a workshop facilitated by Clive Kerr and Rob Phaal, highlighting 'good' and 'bad' features, and assessing the roadmaps in terms of structure, graphics, content and overall visual appeal. This provided a valuable contribution to an ongoing CTM research initiative to better understand how strategy can be effectively visualised and communicated. Anyone interested in joining VSN should contact Rob Phaal (rp108@cam.ac.uk).



EITIM Doc Conference in Twente

After the two previous European Institute for Technology and Innovation Management (EITIM) Doc conferences in Cambridge and Gothenburg, the University of Twente in Enschede (NL) hosted a third successful conference in January 2010. This year's topic was "Innovation and (corporate) entrepreneurship". As for all EITIM Doc conferences, experts from academia as well as from industry shared their experience with us. Prof. Elke den Ouden introduced us to the perspective of Philips Applied Technology on innovation. Roel Pieper (now Thales) demonstrated the proximity of success and failure of corporate entrepreneurship with cases taken from his career in various business development positions. Further contributions to the conference were made by Prof. Bart van Looy on Innovation and ambidexterity, Jaap van Tilburg on the Twente Venture Lab and Paula Englis on researching entrepreneurship.

Besides these presentations, a second building block of EITIM Doc Conferences is the active involvement of the participants. Workshops took place within which we discussed how to start your own business venture, how to design business models and about the challenges of corporate entrepreneurship. A poster carousel gave everybody the opportunity to present his or her work to other PhD students and to find links to each other's topics. Last but not least, we ran the Lego City Car game in Twente. Those who associate the game with a hectic atmosphere, chaotic developments and failures during the presentations as well as bankruptcies would have been surprised by the calm and very coordinated approach chosen by the PhD student teams. Engineers and business managers took the initiative to collaborate from the start of the game, helping all teams to end up with a profit. This event certainly demonstrated the benefit of studying technology and innovation management! Impressions from the conference can be found on: <http://www.youtube.com/watch?v=10JfUxTD2o4>

Recent list of publications

- Mortara, L., Slacik, I., Napp, J.J. and Minshall, T.H.W., (2010). 'Implementing Open Innovation (OI): cultural issues.' *International Journal of Entrepreneurship and Innovation Management* 11(4): 369-397.
- Mitchell, R., Hunt, F. and Probert, D.R.P, (2010) 'Valuing and comparing small portfolios', *Research Technology Management*, Volume 53, No. 2, pp. 43-54
- Tao, L., Garnsey, E., Probert, D. and Ridgman, T. (2010) 'Innovation as response to emissions legislation: revisiting the automotive catalytic converter at Johnson Matthey'. *R&D Management*, 40, 2, 154-168.
- Minshall, T. H. W., Livesey, F., Mortara, L., Napp, J.J., Shi, Y. and Zhang, Y., (2010). 'Manufacturing and Open Innovation. Nanotechnologies for Future Mobile Devices'. T. Ryhänen, M. A. Uusitalo, O. Ikkala and A. Kärkkäinen. Cambridge UK, Cambridge University Press ISBN 978-0521112161.
- Kerr, C., Phaal, R. and Probert, D. (2010), 'Ranking maritime upgrade options', *Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment*, 224(1), pp. 47-59.

Internationalisation of Technology Intelligence

Two editions of the Technology Intelligence workbook have recently appeared on the shelves of Korean and Italian bookshops. The translations have been possible thanks to the work of CTM collaborators in these two countries.

In Korea, Dr Sungjoo Lee, former visiting scholar at CTM and now Professor of Information Systems Engineering, Ajou University (Seoul), has made this translation possible. The book will be shortly available on line from Koyobo books www.kyobobook.co.kr. The collaboration with Dr Lee at Ajou University continues and a series of on-line seminars have been planned to bring CTM's material to the Korean students.



The Italian partners from Strategie & Innovazione (Milan) have developed the Italian version of the workbook available now from their website <http://www.stratinnov.it/it/evento.php>. A series of Technology Intelligence and Roadmapping courses are scheduled in collaboration with Strategie & Innovazione in May (in Milan) and October (in Rome) to continue promoting the dissemination of the CTM's Strategic Technology Management tools.

Open Innovation workshops

CTM staged two successful one-day workshops on Open Innovation (OI), with more around 40 delegates in attendance. The event, entitled Open innovation - practical approaches to accelerating innovation across boundaries, was staged at the IfM at the end of April. The workshops focused on the challenges and opportunities of implementing OI from two perspectives, for SME's seeking to collaborate with large firms and for large firms looking at how to implement OI approaches.

Speakers at the events included Billy Boyle of Owlstone, Roland Harwood from Nesta, Mark Wilson from GSK and Harry Barraza from Unilever.

Though several delegates and speakers were unable to attend due to flight restrictions following the eruption of Icelandic Volcano Eyjafjallajokull, the event was a major success and it is hoped a similar event can be staged again soon.

IAMOT conference 2010

This year's IAMOT (International Association for Management of Technology) conference was held in Cairo. This proved to be a central location leading to a good balance of delegates from Europe, the Americas, the Far East and Africa. This year's theme was technology as the foundation for economic growth. CTM contributed two papers: one from the core research team and the other being a joint submission with our Korean research collaborators. Dr Clive Kerr presented the paper entitled "Depicting options and investment appraisal information in roadmaps". This work reflects a broadening of the roadmapping research into the domain of visual strategy. The paper explored the graphical design and presentation style of roadmaps to communicate alternative procurement plans and their embodied options. Also on the topic of roadmapping, there was a joint paper with one of our previous visiting researchers Dr Byungun Yoon (2007) and his new student Hyunhak Ha on evolution patterns for mapping technology trajectories.

Wanted: Contributions to the CTM technology archive

CTM is building up a collection of iconic technologies for use on various teaching programmes. To date, we have acquired a range of early mobile phones, an Apple Newton, early home computers such as the Sinclair ZX-81 and BBC Micro, and a range of early data storage media. These technologies have proved very helpful in illustrating key technology management concepts such as disruptive innovations, the challenge of new product introduction, and technology evolution. We'd really like to expand this archive, so if any readers have technologies that they would be willing to donate or loan to CTM, please email tim.minshall@eng.cam.ac.uk. Please note, we can only cope with relatively small objects!

New CTM people



Ricardo Gonzalez Nakazawa is visiting CTM from CATI, a technology management and innovation centre in Mexico. He is here to develop new theoretical and practical knowledge to extend the scope and use of technology roadmapping techniques, focusing on the areas of communication, social issues, marketing perspective and related areas.

The aim is to develop and foster collaboration between CTM and CATI.



Maria Rita Massaro is doing research with CTM on the invitation of Dr Letizia Mortara to investigate technology management techniques and tools for six months. Her research aims to identify the key needs for tools and techniques to support innovation and technology management in firms where technology plays an important role.



We would like to welcome Clare Farrukh who is back from her maternity leave. She will be working part-time on various CTM ongoing projects.

Technology management research at Cambridge

- Strategic technology management
- R&D project selection
- Software sourcing in manufacturing
- Enhancing creativity in new product development
- New product introduction collaboration
- Technology management: a process approach
- Technology selection
- Technology evolution in hi-tech firms
- Innovation management in hi-tech firms
- Emergence of technology based industry
- Technology scanning and intelligence
- Technology acquisition
- Technology protection
- Strategic make-or-buy
- Industrial make-or-buy decisions
- Sustainability and technology insertion
- Technology valuation
- Technology foresight

Diary

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

May

Wednesday 12	<i>The make or buy question: are you getting it right?</i>	One-day workshop, IfM Cambridge
Wednesday 19 - Thursday 20	<i>Practical information for sustainable manufacturing</i>	Two-day conference, IfM Cambridge

June

Wednesday 16 - Thursday 17	<i>Strategic roadmapping</i>	Two-day course, IfM Cambridge
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September

Thursday 16 - Friday 17	<i>Technology management symposium</i>	Two-day conference, Moller Centre Cambridge
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October

Wednesday 13	<i>Strategic roadmapping</i>	One-day workshop, IfM Cambridge
Thursday 14	<i>Technology intelligence</i>	One-day workshop, IfM Cambridge

November

Tuesday 9	<i>Valuing and selecting technology projects</i>	One-day workshop, IfM Cambridge
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