

# Technology Management

The newsletter of the Centre for Technology Management (CTM)

March 2016

## R&D Management Conference and PhD Colloquium 2-6 July, Churchill College, Cambridge

Preparations are in full swing for a record attendance at this year's R&D Management Conference, hosted by CTM at Churchill College. There have been over 550 submissions of academic and industrial papers from 43 countries. We expect over 400 academics and industrialists to join us to discuss the issues of the day, present their research and network.

The event is preceded by a new two-day PhD Colloquium, sponsored by the R&D Management Association (RADMA). It will provide selected PhD students with customised feedback on their research from peers, senior scholars and industrial experts.

### Keynote speakers

**Warren East** – Chief Executive of Rolls-Royce plc

**Professor David Teece** – Haas School of Business, University of California, Berkeley

**Professor Chris Whitty** – Chief Scientific Advisor to the UK Department of Health

**Joe de Sousa** - UK/US Product Development Science & Technology Lead, AstraZeneca plc

### Topical research

Leading researchers from around the world will present their work on a variety of topics including:

- Tools, toolkits, techniques and processes for managing technology, R&D and innovation;
- Entrepreneurship, investment, open innovation,

business models and intellectual property;

- Technology and innovation policy, systems of innovation, innovation impact and university-industry interaction;
- People, organisation, skills and learning for R&D effectiveness.

### Industrial relevance

In line with RADMA's aim to increase industrial interest and engagement with both the R&D Management journal and the conference, there will be a strong industry-relevant track throughout the conference, with a variety of practice-oriented workshops. The activities and members of the STIM consortium will be well represented. Day passes for industrial delegates are available for each day of the conference.

### Social programme

The modern facilities of Churchill College and the Institute for Manufacturing provide a convenient location for the conference and the colloquium. A

full range of external activities, including the conference dinner in Kings College, will give access to the summer delights of old Cambridge.

Book your place here: <http://bit.ly/1TOSrZ2>



## Special issue call for R&D Management Journal

A call for papers for a special issue in the R&D Management Journal is due to be issued soon, with guest editors including Letizia Mortara (CTM), Joon Mo Ahn (Sogang University), Riccardo Fini (University of Bologna) and Nadine Roijakkers (Hasselt University).

The issue aims to unveil the potential of open innovation for the achievement of societal goals, such as the eradication of diseases or the realization of more sustainable products and services, for which research is still anecdotal.

Papers are invited to cover three aspects:

- the development of an appropriate measurement system for societal impact in the context of OI;
- the understanding of the mechanisms by which OI contributes to societal goals, and;
- the gathering of evidence with respect to which OI approaches are more effective in fostering societal impact.

## 3DP-RDM Dissemination and Scoping Workshop

The 3D Printing-enabled re-distributed manufacturing (3DP-RDM) Network hosted two days of workshops on 13-14 January in Cambridge. More than 50 participants attended to hear about recently completed feasibility studies and to scope out future areas of research.



The four feasibility studies funded by the 3DP-RDM Network in 2015 were presented at the event:

- *The enabling role of 3DP in redistributed manufacturing: A total cost model* - Dr Martin Baumers, University of Nottingham
- *OPTIMOS PRIME: Organising Production Technology Into MOst Responsive States 3D PRInt Machine Enabled Networks* - Professor Duncan McFarlane, University of Cambridge
- *Investigating the Impact of CAD Data Transfer Standards for 3DP-RDM* - Dr Malte Ressin and Eujin Pei, Brunel University
- *Redistributing Material Supply Chains for 3D printing* - Professor Matthias Holweg and Dr Hans Veldhuis, University of Oxford

Final reports from the Nottingham and Oxford studies are now available online on our 3D printing blog (see link at the bottom) with the others to follow soon.

Participants explored future research directions and possible feasibility study topics in the 3DP-RDM domain, leading to the identification of 30 research topics.

The 2016 3DP-RDM feasibility study competition, now closed, was announced at the workshop, and the 24 proposals are currently under review.

For more information visit the 3DP-RDM Network blog [capturingthevalue.wordpress.com](http://capturingthevalue.wordpress.com) contact **Dr Simon Ford** [sjf39@cam.ac.uk](mailto:sjf39@cam.ac.uk)

## Growing activities in the Innovation and IP Management (IIPM) research group

Our intellectual property-related research activities are developing nicely, with a research focus on IP challenges in emerging manufacturing technologies taking a relational perspective on multi-partner collaborations. The group has been growing with the recent arrival of research associate **Ghita Lauritzen** and two PhD students - **Mingjin Guo** and **Tianyi Wang**. Our IP interest group (IPIG) is taking shape with new members joining, such as Williams F1 and Siemens.

The second Strategic IP Forum (SIPF) took place in the end of 2015 with more than 50 participants and speakers from Qualcomm, the NHS, Cambridge Enterprise and Aistemos. The third SIPF will be held on 24 May, with two speakers already confirmed: Dr Stephan Wolke, Head of IP & Services at ThyssenKrupp AG and Ian Harvey, former CEO of BTG Plc.

Get in touch if you are interested in collaborating with the research group or join the IPIG, if you work for a manufacturing firm, whether small or large. There is no fee for joining, but we want members to commit to participating in the meetings, which take place about three times a year for two hours.

For more information on the IIPM research group: visit [www.ifm.eng.cam.ac.uk/research/ctm/ctmresearch/im](http://www.ifm.eng.cam.ac.uk/research/ctm/ctmresearch/im) or contact **Dr Frank Tietze** at [frank.tietze@eng.cam.ac.uk](mailto:frank.tietze@eng.cam.ac.uk)

## STIM 2016 Launched

The fourth year of the Strategic Technology & Innovation Management (STIM) consortium programme is under way. The number of participating companies has grown steadily each year and the portfolio of research projects has expanded too. Research topics for this year include tools and toolkits, business models, sustainability and an exploration of the value and utilisation of time in R&D.

The STIM programme includes a series of network meetings and research engagement days through the year, and member forum meetings focus on topics raised for discussion by participating companies. The first meeting of the year was kindly hosted by Mars in Slough on 24-25 February.

Visit [www.ifm.eng.cam.ac.uk/research/ctm/stim](http://www.ifm.eng.cam.ac.uk/research/ctm/stim) or contact **Dr Rob Phaal** [rp108@cam.ac.uk](mailto:rp108@cam.ac.uk)



## Developing a national strategy for additive manufacturing

Working with colleagues from IfM's Centre for Science, Technology and



Innovation Policy, the research team from CTM's 'Bit by Bit' project have been continuing to support the development of a UK national strategy for additive manufacturing (AM, also known as 3D printing).

The strategy aims to enable UK industry to maximise the opportunities and benefits of AM and will be released in early Summer 2016. It will provide a series of recommendations on how to develop a national focal point for the AM community, improve awareness of AM for existing manufacturers, and overcome the lack of co-ordination and structured knowledge transfer between the many sectors starting to invest in new AM developments.

Updates on the development of the strategy can be found at [www.amnationalstrategy.uk](http://www.amnationalstrategy.uk) and by following @dfab\_info on Twitter.

### ECS-CTM collaboration boost

CTM's long-standing relationship with IfM Education and Consultancy Services (IfM ECS) - the dissemination arm of IfM - has been further strengthened by **Dr Imoh Ilevbare's** joint CTM and IfM ECS product development role.



Ongoing work includes:

- Creation of a roadmapping practice guide that provides an up-to-date summary of CTM's roadmapping processes, in collaboration with **Dr Rob Phaal**, **Dr Clive Kerr** and **Dr Michèle Routley**.
- Setting up a Roadmapping Interest Group where IfM researchers and practitioners can discuss improvements to our roadmapping practice.
- Tool development projects, currently being executed within the STIM consortium, such as System Design Characterisation (SDC), marketing technology and business-aligned technology strategy.

For more information on how to participate in any of the three STIM projects, please contact Imoh Ilevbare [imi22@cam.ac.uk](mailto:imi22@cam.ac.uk)

### Roadmapping Open Forum 2016

This year we are holding three Open Forum events:

- Tuesday 15 March at the Institute for Manufacturing
- Wednesday 6 July at the R&D Management conference
- Thursday 13 October in Cambridge.

The forum forms part of the activities of the STIM Consortium 2016 Roadmapping project which aims to promote discussions between roadmapping companies, build up a repository of roadmapping case studies and start to build maturity/lifecycle model of experience and good practice.

If you would like to attend, and if you or a colleague would be willing to make a short presentation (up to 30 mins) on your experiences of roadmapping, please email **Clare Farrukh** [cjp22@cam.ac.uk](mailto:cjp22@cam.ac.uk) or see further details at [www.ifm.eng.cam.ac.uk/events/strategic-technology-innovation-management-forum](http://www.ifm.eng.cam.ac.uk/events/strategic-technology-innovation-management-forum)

### One day IP teaching workshop

**Dr Frank Tietze** is organizing a one-day workshop with Dr Marcus Holgersson (Chalmers University of Technology, Sweden) for about 20 academic and industrial participants to share best practice examples about how to teach IP management effectively to a non-lawyer audience. The event will take place on 16 September at the IfM and is supported by EITIM. If you are interested in joining contact Frank at [frank.tietze@eng.cam.ac.uk](mailto:frank.tietze@eng.cam.ac.uk)

### New Front End of Innovation Report

CTM has just published a new Practice Guide: "Reducing the risk of failure in new product development: getting it right at the front end of innovation".

Written by **Dr Simon Ford**, along with former students **Clémence Aubert** and **Emmanuelle Ryckewaert**, it provides insights and guidance for everyone involved in the innovation process so that they can avoid common pitfalls and improve their innovation pipelines.

[www.ifm.eng.cam.ac.uk/news/reducing-the-risk-of-failure-in-new-product-development](http://www.ifm.eng.cam.ac.uk/news/reducing-the-risk-of-failure-in-new-product-development)



### People news

Welcome:

**Ghita Dragsdahl Lauritzen** joined CTM as a Research Associate. She is part of the Innovation and IP Management group seeking to develop and integrate strategic IP management with strategic technology and corporate management to leverage the innovation potential of multi-partner R&D collaborations.



Prior to joining IfM, Ghita was a Postdoc at the Department of Management Engineering at the Technical University of Denmark (DTU). Ghita has three years of experience as a consultant and designer of game-based training and user involvement. She holds a BA in Philosophy from Roskilde University (RUC) in Denmark and a MSc in Political Communication and Management from Copenhagen Business School (CBS) in Denmark. Email: [gdl27@cam.ac.uk](mailto:gdl27@cam.ac.uk)

**Marc Felske** has joined CTM as an academic visitor under the supervision of Dr Tim Minshall. He has a background in Mechanical Engineering and Business Administration and specialises in the field of Plastics Processing. He is currently conducting research for his master thesis on drivers and barriers of 3D printing for the use in future medical applications with RWTH Aachen University.



**Nils Foege** joined CTM as an academic visitor from RWTH Aachen University in Germany under the supervision of Dr Frank Tietze. His research focuses on the management of intellectual property in innovation collaboration. The purpose of his studies is to gain a better understanding about organizations' and individuals' value appropriation strategies in partnerships for innovation. Nils has a Master's Degree in Management and Economics. He is a research assistant at the Innovation, Strategy, and Organization Group within the TIME Research Area at RWTH Aachen University.



#### Visiting students from Ajou University

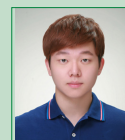
**Heeyong Noh** is a PhD student of Ajou University in South Korea visiting CTM under the supervision of Dr Letizia Mortara. His current research focuses on consolidating process maturity models and technology intelligence, entitled 'The process maturity model of technology intelligence'.



**Jacob (Jaehyung) An** is a Master's student. His research topic is text mining-based patent analysis, finding ways for converting unstructured text data in patent to structured data format working under the supervision of Dr Mortara.

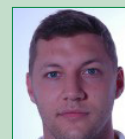


**Kyuwoong Kim** is an undergraduate student working with Heeyong and Jacob under the supervision with Dr Mortara. His interests lie in technology management and patent analysis. The three students have now returned to Ajou University.



#### Goodbye

Goodbye to **Bernhard Hilgert**, from Technical University Munich who was supporting Dr Frank Tietze in his research on scenarios of how 3D printing impacts firms' IP management.



# 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
- Intellectual property management
- Strategic make-or-buy
- Industrial make-or-buy decisions
- Sustainability and technology insertion
- Technology valuation
- Technology foresight

## Congratulations

**Elliott More** has completed his PhD research. The research explored how to improve senior decision makers' awareness of long-term gradual threats in the external environment. A key practical outcome of the research was a workshop tool, developed and trialled in collaboration with ECS. Elliott is now working at Arup in London, and will continue to explore how the findings from his research can improve strategic decision making. He can be contacted at [elliott.g.more@gmail.com](mailto:elliott.g.more@gmail.com)



## New publications

Ford, S., L. Mortara and T. Minshall (2016), *'The Emergence of Additive Manufacturing: Introduction to the Special Issue'*, Technological Forecasting & Social Change 102 (January 2016): 156-159.

Jeong, Y., Lee, K., Yoon, B. and Phaal, R. (2015), *'Development of a patent roadmap through the generative topographic mapping and bass diffusion model'*, Journal of Engineering and Technology Management, 38, Oct-Dec, pp. 53-70

Lee, K., M. J. Platts and T. Minshall (2015), *'Explorations of Evidence-based Policymaking (EBPM) for Reconciling Science and Policy: Developing a Conceptual Framework for Improved Understanding of EBPM in Wind Industry Emergence'*, Science, Technology and Innovation Policy Review 6(2): 146-173.

Minshall, T., L. Mortara and T. Ulrichsen (2015). University-industry partnerships and open innovation implementation: Experiences from Cambridge, 2nd World Open Innovation Conference 19-20th November 2015. Santa Clara, CA.

Zhou, Y., G. Xu, T. H. W. Minshall and P. Liu (2015). "How do public demonstration projects promote green-manufacturing technologies to massive SMEs: A case study in China." Sustainable Development 23: 217-231.

## Diary 2016

[www.ifm.eng.cam.ac.uk/events](http://www.ifm.eng.cam.ac.uk/events)

### March

15	2016 STIM Consortium Programme Roadmapping Open Forum	Open event IfM, Cambridge
----	---	------------------------------

### April

12-14	Technology and Innovation Management Course	Two-day course IfM, Cambridge
-------	---	----------------------------------

### May

12	IfM Briefing Day	Free event IfM, Cambridge
24	Strategic IP Forum	Open event IfM Cambridge

### June

8-9	Strategic Roadmapping Course	Two-day course IfM, Cambridge
-----	------------------------------	----------------------------------

### July

2-6	R&D Management Conference and PhD Colloquium	Five-day event Churchill College, Cambridge
-----	--	--

## Contact us

Centre for Technology Management  
Institute for Manufacturing  
Department of Engineering  
17 Charles Babbage Road  
Cambridge, CB3 0FS UK

Tel: +44 (0)1223 766141  
Fax: +44 (0)1223 464217  
[ctm-enquiries@eng.cam.ac.uk](mailto:ctm-enquiries@eng.cam.ac.uk)  
[www.ifm.eng.cam.ac.uk/ctm](http://www.ifm.eng.cam.ac.uk/ctm)