

# Technology Management

Quarterly newsletter of the Centre for Technology Management

August 2000



UNIVERSITY OF  
CAMBRIDGE

## Technology - what does the future hold?

*6th Annual Technology Management Symposium*

Cambridge 13-14 July

Where is technology taking us all in the future? What kind of impact will it have on business, society and the individual? How can organisations plan to achieve best results for all stakeholders amidst such rapid change?

These were the key questions underlying this year's Technology Management Symposium. Sponsored by the Foresight Directorate at the Office of Science and Technology and the DTI, and supported by contributions from many leading companies, the Symposium provided a great opportunity to review best practice, UK Government actions and current research in this area.

A major contribution is being made by the companies of the MATI consortium in the USA and several members made stimulating presentations to the Symposium. Technology roadmapping is a key technique used by many companies to explore the link between technology developments and future markets, and both Rich Albright from Lucent Technologies and Keith Bergelt from Motorola reviewed their companies' use of this technique in their plenary presentations. Roadmapping was further explored in case study and workshop sessions, drawing on a variety of industrial experience as well as current research into the effective application of rapid roadmapping techniques for smaller businesses.



Stimulating presentations also came from John Howells of 3M, who described the company's approach to sustaining innovation in a large corporation, and Yasuo Ikawa who outlined Toshiba's major shift in global R&D organisation to deal with rapidly changing technology. Professor Hugo Tschirky of the Swiss Federal Institute of Technology challenged academia and industry alike with a very lively view of the perilous gap in conventional management thinking when it comes to dealing with technology. He argued for a new drive from engineering and technology-based universities to pioneer relevant teaching and research.

A further highlight of the two days was the thought provoking speech from Will Hutton, Chief Executive of The Industrial Society. Taking as his theme 'The Network Society', he described the recent growing disparity between those active in technology linked networks and those outside them. Unless steps are taken to bridge this growing divide, he foresees ever increasing inequalities of wealth and a fracturing of society. The discussion

became even more lively when he opened up for questions from the floor!

The theme of the Symposium clearly struck a chord with a wide range of industrial sectors, and drew our largest representation to date from home and abroad. We expect the link to overseas organisations to grow, providing stimulating insights into international practice. The MATI consortium has a regular series of meetings in the US, to which Centre members are invited. Meanwhile we look forward to our next Symposium in Cambridge on 12-13 July 2001, when we shall explore another big issue for technology management.

*David Probert*

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## E-business project brings real benefits to Post Office

Over the last three years the Post Office has identified that the internet would offer some benefits to its operation and has set out to change the way it does business. By setting up some focused programmes, with good intercommunication, it has been able to show the quick wins needed to convince the company as a whole of the benefits of e-business.

There were some clear drivers that led in the direction of becoming an 'e-business' such as:

- £600m+ of internal trading
- £1.5bn paid to suppliers
- Large organisation with bureaucratic tendencies
- Functional organisational structure
- Uncertain future markets
- A need for new products

However the sheer size of the business meant that there was a danger of small effort frittering away resources to achieve very little of value.

The Post Office had already set up an environment to encourage innovative activities. The Innovation Lab, with Experiential and Creativity Centres has received over 4,500 visitors since it opened in April 1998. The Innovation Fund has been set up with an annual £3m venture capital fund and has already had over 300 initiatives.

The initial work was done within the Research Group and having created pilots to show the opportunities, we pulled together the interested people in a programme with some clear properties:

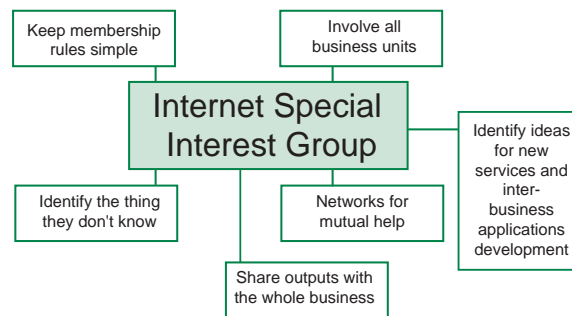
- Senior management stewardship

- Nurturing ideas
- Active management
- Removing road blocks
- Non-delivery not an option
- Bridging the gap
- Business
- Technology
- Interested people from all over the business

The programme was tasked with producing clear benefits, quickly. It achieved its targets with fast deployment of e-business projects (less than 1 year) that had clear customer, market and business benefit. We were able to show true cross company working - dissolving boundaries – see figure.

The key messages from the programme were:

- Innovate every step of the way
- Deploy e-business rapidly
- Bring together component parts in a unique way creating fusion and a chain reaction



The tangible hard benefits have now meant that the early pilots have become part of the 'business as usual' activities and that the business has re-organised itself to emphasise the e-business requirements of the current environment.

*Brian Shatwell*

*Head of Future Technologies Group*

## 'Virtual' European Institute of TM established

Technology management is a very broad subject, drawing on ideas from many disciplines. However general management theory has very little to say in this area, and there is a real need for technology based universities and institutions to take a lead in defining the content relevant to technology intensive industry. Professor Hugo Tschirky, of the Swiss Federal Institute of Technology, has been pioneering a new approach, and has brought together a group of European institutions to take up this challenge, forming a virtual European Institute for Technology Management (EITM).

In addition to the Centre and SFIT, collaborating organisations include the Technical University in Eindhoven,

Chalmers University in Sweden, University College Dublin, the Technical University Hamburg and Helsinki Technical University. Through a series of workshop meetings we aim to develop the new shared content of relevant management education courses.

### Course material

The first meeting was held in February, the second in July and later this year we expect to have a first draft of the course material. The next step would be to test this for value and relevance, involving Centre members and other technology intensive companies here and abroad.

*David Probert*

## NPI Club restarted by popular demand

The New Product Introduction Club has been relaunched by popular demand. The NPI Club was started in 1993 by Centre researchers as a forum for companies in the Cambridge area to share experiences of introducing new products, exchange ideas for good practice and perform some limited bench marking.

A group of eight small and medium sized, hi-tech companies met regularly and discussed a wide range of issues involved with New Product Introduction. The opportunity to share both problems and successes proved highly popular with those involved.

The Club was restarted in May, at the Møller Centre, Churchill College, having been dormant for about a year, and members old and new attended.

### Role of collaborations in NPI

The opening meeting focused on the role of collaborations and partnerships in product development (customers, suppliers and other third parties). Pete Fraser described the Centre's current NPI work and Steve Marriott of WPA gave a very interesting talk on distributed product development. WPA is a small company and does not have the resources to do all its development work in-house. Consequently, it has deliberately partitioned the design of its products to make it easier to outsource and has developed partnerships with local firms to provide sub-systems such as optics, processor and software.

### Topics for future meetings

There was an extensive discussion on points arising from Steve's talk and the evening wound up with some suggestions for future meeting topics which included:

- Various aspects of project control: post project review (learning from what happened), how to do design review, how/when to kill projects, how to decide when/whether to allow goalposts to be moved
- Various aspects of customer/requirements identification - who are the customers, voice of the customer, requirements in new/emergent markets
- Knowledge management - what is it and how do you do it?
- Others, including IPR, roadmapping and value engineering

### Are you interested?

It is hoped that the Club will meet every two months. If you have any queries about the NPI club, please contact Pete Fraser: [pvf20@eng.cam.ac.uk](mailto:pvf20@eng.cam.ac.uk)

## Extending the international reach of the TM Network

A proposal has been made to the EPSRC to extend the scope and influence of the existing EPSRC Technology Management Network by increasing the number of active links with international academics and industrialists involved in practice, education and research in the context of industrially relevant technology management issues. Key objectives include:

- Establishing mechanisms for cross-sectoral and multi-disciplinary communication, dissemination and collaboration across national borders
- Stimulating exchange of technology management ideas, models and techniques between and within academic and industrial groups, representing a broad range of knowledge, experience, skills, industry sectors and countries
- Identifying and prioritising research opportunities at an international level, as a basis for the development of innovative collaborative research programmes

The mechanisms for this increase in international activity include contributing to the setting up of a recently conceived virtual European Institute for Technology Management (see opposite) and building on existing links with academics and industrialists in the Management of Accelerated Technology Insertion Consortium (MATI) in the USA.

## Welcome to Philips - new Centre members

We are pleased to report that Philips Consumer Electronics has recently joined the Centre. We have worked with various parts of the Philips organisation overall several years, including many student projects and involvement in research projects and dissemination events. Their leading application of technology roadmapping was one of the major triggers of our interest in this subject.

Links to the wider company will be coordinated through Bob Bates of the Advanced Projects Group, and we look forward to continuing our already useful collaborations on an extended basis.

## French student seconded to Centre

Aurore Colson, right, a French student working with the French electricity company EDF, has been seconded to the Centre over the summer to gain research experience. Aurore will be working with the strategic technology management project team, investigating issues relating to technology valuation. She is working with EDF for a year as part of a business degree.



# Technology management research at Cambridge

- New product introduction for SMEs
- New Product Introduction collaboration
- Strategic technology management
- R&D project selection
- World class software delivery
- Product planning
- Technology change
- Technology management: a process approach
- Decision support
- Technology evolution in hi-tech firms
- Innovation management in hi-tech firms
- Technology management in software production
- Strategic management competences
- Strategic make or buy
- Industrial make or buy decisions
- Sustainability and knowledge management
- Engineering re-use
- Technology foresight

## Conference report

7<sup>th</sup> International Product Development Management Conference (IPDMC)  
Leuven, Brussels, May, 2000

This conference provides an opportunity for researchers from around the world to update and exchange views on current issues in product development.

The conference was well attended from around the world, with eminent academics from the USA, UK and northern Europe.

The increasing importance of effective New Product Introduction (NPI) activities was demonstrated throughout the conference, with a diverse range of topics covering all aspects of the process. Whilst there is still a strong interest in the NPI process itself, there was an increasing focus on some of the 'softer issues' such as creativity, design, customer satisfaction and teamwork. Product

development strategy and product planning is also a key area of research, with the emphasis moving towards 'doing the right thing' as opposed to the 'doing it right' of the 90's.

There was a strong Institute attendance at the conference, with Pete Fraser, James Moultrie and Matt Schofield from the Centre for Technology Management, along with Professor Mike Gregory who also sits on the conference organising committee.

and knowledge management. During the later part of the afternoon these groups will be encouraged to examine the potential for collaborative research in these areas.

*Managing Knowledge for Competitive Advantage - achieving success through people*  
4 October 2000, IEE, Savoy Place, London

This one-day forum, jointly organised by the IEE and the Institute for Manufacturing, will focus on the human element in Knowledge Management. The programme will bring together industrial managers, KM practitioners and researchers and speakers will focus on the methods used, successes achieved and lessons learned. Presentations will be followed by a panel session to stimulate further discussion on practical issues such as motivating knowledge sharing and the need to demonstrate a positive impact on the bottom line.

## Coming events

Technology Management Network – 'Looking forward'

22 September, Møller Centre, Cambridge

The morning will consist of a series of plenary presentations and discussion sessions. The afternoon will be spent in smaller groups focussing on areas such as metrics, technology transfer

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## Quarterly Diary

### September

22nd	TM Network forum Cambridge	<i>Looking forward</i>
26th	One-day course Cambridge	<i>Make or buy - from strategy to practice</i>

### October

4th	One-day forum London	<i>Managing knowledge for competitive advantage</i>
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### November

9th	Half-day seminar Cambridge	<i>Good design practice</i>
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