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Strategic Roadmapping Newsletter

December 2012

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IfM roadmapping techniques outline the future of the UK pharmaceutical and biopharmaceutical industries

A new study aimed at identifying needs, opportunities and challenges in the UK pharmaceutical and biopharmaceutical manufacturing sectors was published this month. The study was carried out through a series of roadmapping workshops run by the IfM's dissemination arm, [IfM Education and Consultancy Services \(IfM ECS\)](#), which were attended by representatives from industry, government bodies and the research community.

'The Future UK Life Sciences Manufacturing Landscape: Opportunities and Challenges for High Value Manufacturing in the Pharmaceutical and Biopharmaceutical Sectors' was commissioned by the Technology Strategy Board and the roadmapping project was led by IfM ECS in collaboration with the HealthTech and Medicines Knowledge Transfer. The need for this research was identified as part of a wider project on [High Value Manufacturing \(HVM\)](#) also developed by IfM ECS and published in February 2012, which had recommended that key sectors should be explored in greater depth. For any queries contact [Dominic Oughton](#).



[Download the report here](#)

Roadmapping the future of synthetic biology

The UK government has identified synthetic biology as an emerging technology with the potential to become a billion-pound industry for the UK within the next ten years. Synthetic biology could help tackle global challenges in areas such as healthcare, energy and the environment. For its potential to be realised, the government wants to ensure that there is a clear – and shared – sense of direction and a robust and responsible ethical framework in place. In 2011 the Department of Business and Skills established an independent panel, the *UK Synthetic Biology Roadmap Coordinating Group*, comprising experts from industry, academia, government, the research councils and Technology Strategy Board. The task of this group was to bring together an engaged stakeholder group to produce a 'roadmap' to 2030 and beyond that will create the conditions in which companies can develop products, processes and services that have clear public benefit and economic value.



In 2012 IfM ECS ran a series of roadmapping workshops attended by more than 70 experts representing the key stakeholder groups. The workshops initially reviewed the entire synthetic biology landscape, looking at the short, medium and long terms. Details were then added, identifying key trends and drivers and anything that could affect outcomes at each stage of the process. A report outlining the findings and recommendations was published by the Technology Strategy Board in July 2012.

Lionel Clarke from Shell, Chair of the Coordinating Group, said:

"The structure [IfM ECS] provided stimulated the full engagement of all participants in the discussion and contribution of ideas. As a result, we were able to meet our main objective which was to start building a broad community, sharing ideas and concerns and identifying issues where changes to policy or putting in place supporting structures would help. The team was very effective, enabling progress to be made rapidly."

[Download the case study](#) Contact: [Dominic Oughton](#).

Roadmapping for innovation needs in the Food & FMCG sector



The *OI Forum* is a structured programme run by [Dominic Oughton](#), Principal Industrial Fellow for IfM ECS, which allows members to share best practice, explore 'hot topics' along the food and FMCG Value Stream and participate in optional, accelerated Open Innovation (OI) collaborations. The most recent Forum meeting was held in September and hosted by DSM in Delft, Netherlands.

The group spent much of its time gathering the perspectives of around 20 organisations along the length of the Value Chain (from ingredients suppliers such as DSM, Cargill and Tate & Lyle) through packaging companies (MeadWestvaco and Crown Packaging) to brand owners (including Unilever, Heinz, General Mills, Mars, Premier Foods and Bacardi).

The resulting roadmap gives a unique insight into the drivers that will shape this sector over the next ten years, as well as identifying opportunities for value creation and capture and the need for innovation. As well as providing a clear picture of the future direction of the sector, the roadmap has also enabled the OI Forum to set a linked series of agendas for 2013 which will deliver maximum value for the participants in addressing the drivers and opportunities identified by the roadmap.

Read more about the [OI Forum](#)

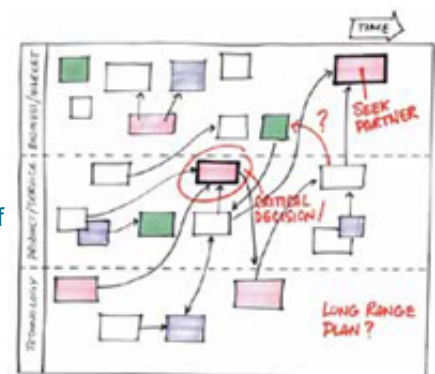
Tools and toolkits for strategic planning

[Clive Kerr](#) and [Rob Phaal](#) recently ran a research workshop through the Visual Strategy Network to explore the use of tools and toolkits in strategic planning.

There were presentations from Iain Acton and Adrian Cole of [Disruptive Lemonade](#) on their set of tools for disruptive innovation, and from [Clive Kerr](#) on tool combinations and how to configure them into functional toolkits. Clive and Rob facilitated a visual prototyping activity for designing a strategic planning toolkit based on an approach currently in development by the Centre for Technology Management. The activity was centred around a set of 12 well-known tools (such as SWOT, Porter's five forces, technology roadmapping, scenarios, value chains, portfolio matrices, etc.) and focused on their appropriate selection, arrangement and process sequencing. The outcome was the creation of a number of toolkits customised for different scenarios: technology push, path dependency/resource constraints and market pull.

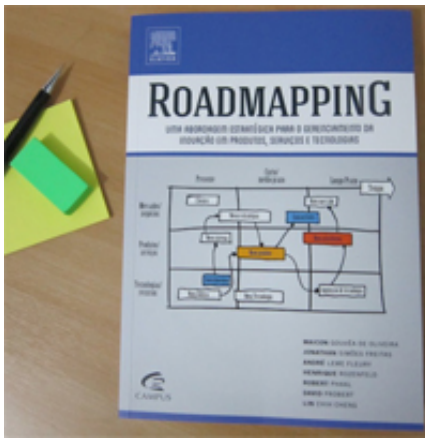
For more information, contact [Clive Kerr](#).

The Visual Strategy Network is a community of people from industry, academia and government who have an interest in using roadmapping and related visual techniques for supporting strategy and innovation. Click here for more information about the [Visual Strategy Network](#).



News from Brazil

New roadmapping book for Brazilian practitioners



The first book on roadmapping to be published in Portuguese is now available. Building on recent practical and academic achievements, Roadmapping has been jointly published by researchers and professors from the University of São Paulo (USP), the Federal University of Minas Gerais (UFMG) and the Centre for Technology Management (CTM) at Cambridge.

The book introduces the roadmapping approach, includes a compilation of key processes, with an emphasis on workshop methods, illustrated with Brazilian cases, and dedicates a chapter to the enrichment of roadmapping through the analysis of the gaps in roadmaps.

More information about the book can be found [here](#) and on [Facebook](#) (in Portuguese). You can also contact [Macon G. Oliveria](#).

Roadmapping used to research the emergence of academic spin-offs

A research project has used roadmapping techniques to investigate the development of academic spin-offs in Brazil. As well as presenting useful findings on the various roles of R&D activities, internal structures, resources and environmental conditions in the emergence of academic spin-offs, the work demonstrates the value of using roadmapping techniques as a research tool. Results have been recently published in the journal [Technological Forecasting & Social Change](#).

To find out more, contact [Jonathan S. Freitas](#).

Sustainability and corporate strategy

There is currently a lack of understanding as to how sustainability, as an abstract concept, influences corporate strategy. Research at the [Centre for Technology Management](#) is looking at how sustainability issues – such as resource scarcity – are perceived and acted upon. We are developing a workshop-based tool which will help organisations identify the trends and drivers relating to sustainability, and which will be tailored to take each organisation's unique characteristics into account. Within the near future there will be an opportunity for organisations to road-test this tool free of charge.



If you would like to take part, please contact [Elliott More](#).

Training and transfer

The next one-day [Strategic Roadmapping course](#) will be held on 12 March 2013. We are also running a two-day course on the 19-20 June, while another one-day training course will be held in October. [Book your place now!](#)

As well as the regular series courses, we also provide in-company training to support the transfer of our methods to industry. One of the key benefits of this kind of training is that we can customise the practical activities to focus on specific company issues. We can also combine training with direct application support, working with internal facilitators to ensure that companies can quickly acquire their own roadmapping knowledge and skills.

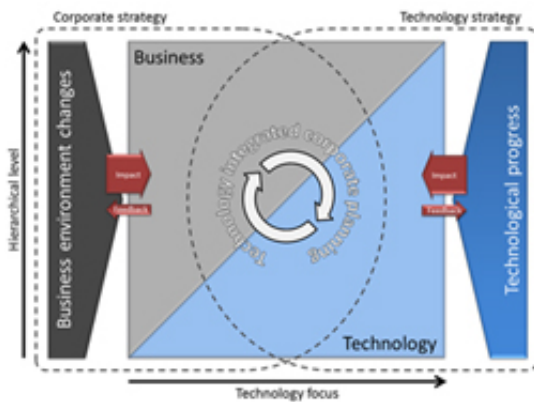


We have run programmes such as this in Australia, Austria, Canada, Germany, Ireland, Japan, Korea, Malaysia, Mexico, Singapore, South Africa, Sweden, Taiwan, Thailand, The Netherlands, UK, and USA.

To find out more about in-company training, contact [Rob Phaal](#).

Linking technology to corporate strategy

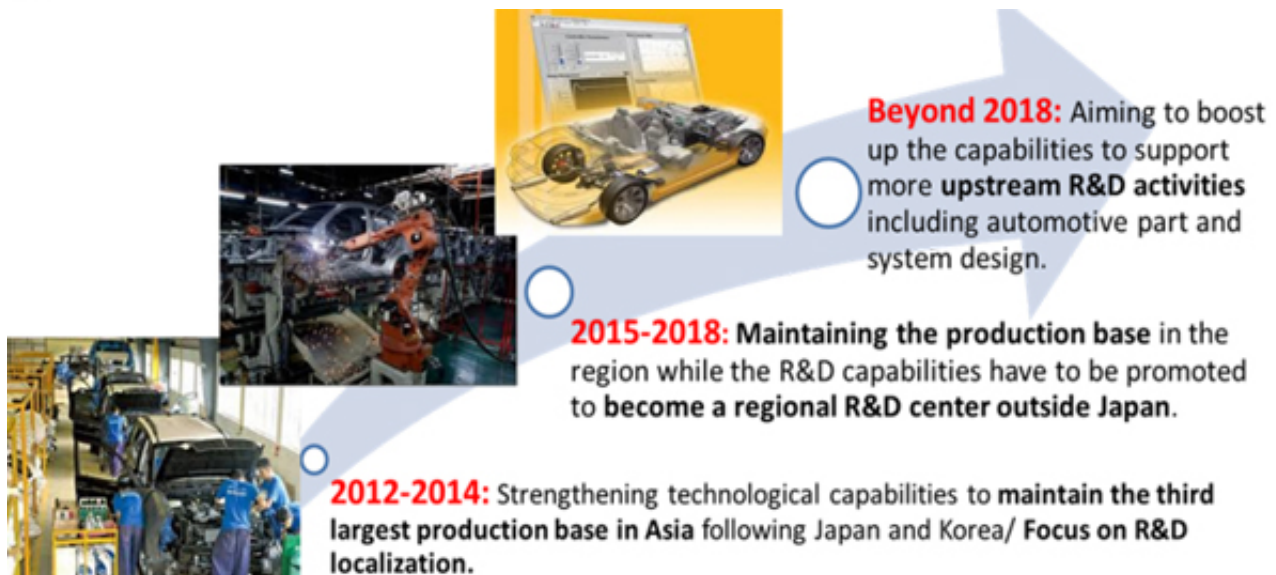
The Centre for Technology Management is looking for organisations interested in participating in a case study to analyse management processes, tools and approaches that link technological planning to corporate strategy. This research is being led by Clemens Chaskel, who is a third year PhD student.



The aim of the case study is the identification and analysis of particular strengths as well as improvement opportunities in corporate and technological planning approaches. This will cover product, technology and business strategy related processes and the application of supportive tools, such as portfolio management and roadmaps. In addition to a confidential report of findings delivered to participating companies, these will be contrasted to academic literature in order to formulate a potential best practice and to construct a framework for formulating and managing balanced, technology integrated strategy formulation.

For further information please contact [Clemens Chaskel](#).

Roadmapping the Future Development of Automotive Industry in Thailand through the Enhancement of Public-Private Partnership (PPP)



Within the past 50 years, the automotive industry in Thailand has undergone major transformations. Starting from TNCs established their assembly plants in 1960s and then the emergence and growth of local manufacturers of automotive parts and components from the 1970s onwards. In the 1980s, Thailand became the ASEAN automotive production center. From the 1990s, the industry has gone through major liberalization. The local content requirement was phased out and import tariffs were reduced substantially in compliance with World Trade Organization (WTO) rules. In 2010, Thailand produced around 1.65 million cars of which around 50% were exported, equivalent to 18 billion US\$. Currently, Thailand ranked as number one in ASEAN and number 12 in the world in terms of production volume with the product champions of pick-up trucks and eco cars.

To continue paving the road for the future, the key state agencies; Thailand Automotive Institute (TAI) and Thailand National Science and Technology Development Agency (NSTDA) stirred up the initiative to work with the local automotive firms, auto-part makers, raw materials and machine suppliers, automotive industrial associations, universities, government, and research institutes to develop the industry roadmap. The objective of this roadmap is to enhance the capabilities of firms in coping with the global dynamic and link R&D plans to the future needs of the industry.



The *insightTRM* team of researchers and policy makers led by Dr. Gerdri was invited to design the structure of the roadmap, customize the roadmapping process with the PPP enhancement, facilitate a series of TRM workshops, analyze and develop the roadmap, and conduct the public hearing sessions. The results present the pathway for Thai automotive industry to become a key regional R&D centers while maintain the leading position for efficient and eco-friendly production. More details will soon be publicized.

Contact: [Dr. Nathasit Gerdsr.](#)

2012 CTM publications

Kerr, C., Phaal, R. and Probert, D. (2012), '*Depicting options and investment appraisal information in roadmaps*', *Journal of Innovation and Technology Management*, 9 (3), pp. 1-19.

Phaal, R., Kerr, C., Oughton, D. and Probert, D. (2012), '*Towards a modular toolkit for strategic technology management*', *International Journal of Technology Intelligence and Planning*, 8 (2), pp. 161-181.

Ford, S.J., Routley, M.J., Phaal, R. and Probert, D.R. (2012), '*Capturing past experience: the expert scan visual mapping process*', *International Journal of Technology Intelligence and Planning*, 8(1), pp. 47-59.

Phaal, R., Routley, M., Athanassopoulou, N. and Probert, D. (2012), '*Charting exploitation strategies for early stage technology*', *Research-Technology Management*, 55 (2), March-April, pp. 34-42.

Kerr, C., Phaal, R. and Probert, D. (2012), '*Cogitate, articulate, communicate: the psychosocial reality of technology roadmapping and roadmaps*', *R&D Management*, 42(1), pp. 1-13.



The Institute for Manufacturing (IfM) integrates research and education with practical application in industry, providing a unique environment for the creation of new ideas and approaches to modern industrial practice. The IfM is a division of the Department of Engineering.



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