



# **Making Manufacturing Work**

## **Strategic responses to international pressures**

Manufacturing industries in high-cost economies are experiencing an increasing degree of international competition, with the cost gap between developed and developing world making it very difficult for companies to set up production facilities in the markets that they serve. Competing successfully as a manufacturer requires a strategic response to this problem.

### **Two possible solutions are:**

- *Hi-tech innovation – product differentiation enabling the low-volume manufacture of valuable, innovative products in high-cost economies*
- *Low-cost production networks – allowing the manufacture of higher volume products in economically favourable conditions*

The MET Overseas Research Programme will investigate these two competitive approaches, identifying the skills and techniques needed to maximise the value from both.

The project team has identified California, Texas and Mexico as locations that offer interesting examples of how these contrasting approaches can be managed, both within and across national boundaries.

The team of around 35 staff and students will visit approximately 30 companies in these areas, across a variety of sectors, during two weeks in June and July 2004. The tour will build on a foundation of several months of Cambridge-based research.

## **The research programme**

By studying the operation and organisation of companies in the US-Mexican border area and hi-tech areas of California and Texas, we will explore responses to international competitive pressures, focusing on the two major theme areas outlined below.

The theme areas are still being developed and we welcome suggestions from interested companies regarding particular issues that concern them, including the development of specific areas in partnership with sponsors.

### **Suggested themes**

#### **Low cost production networks**

*How should the value chain be configured across borders for maximum advantage?*

- How can low-cost networks be managed and set-up?
- How is knowledge managed in the production chain?
- Identification of problems and pit-falls associated with particular strategies
- Are low-cost networks sustainable?
- Low-cost production response to innovation

#### **High-tech innovation**

*How can manufacturers differentiate products to compete successfully?*

- How is successful innovation supported?
- How do you manage the innovator to SME transition?
- Making rapid customisation work
- Translating innovation into production

## **Deliverables**

The outputs of the MET Research Programme will be communicated in two principal ways:

- A seminar to be held on the 16 July at New Hall, Cambridge, at which detailed findings will be presented
- A comprehensive written report

In addition, tailored reports may be produced where it is applicable, giving more detailed feed back concerning areas of particular interest to principal sponsors.

## **Benefits to sponsors**

Themes may be tailored to meet principal sponsors' particular areas of interest.

Positive publicity will be generated through sponsorship of the Research Programme. Sponsors will be fully acknowledged in all the Programme communications.

Sponsoring organisations will have privileged access to a high-calibre group of students on one of the most highly regarded degree courses in the country.

The findings of the Research Programme will be directly available to sponsors, and each sponsor will receive two complimentary places at the seminar, in conjunction with copies of the Research Programme report.

## **Resources required**

The total cost of the study is currently estimated to be £57k, which is broken down as follows:

Airfare and insurance	£22k	Subsistence	£5k
Coach Travel	£17k	Conference	£2k
Accommodation	£8k	Miscellaneous	£3k

The Institute for Manufacturing has pledged £20k. We anticipate the balance coming from government, national and local organisations and commercial sponsors.



## **MET**

MET (Manufacturing Engineering Tripos) is a unique two-year programme, comprising the 3rd and 4th year of the Cambridge engineering degree. It covers marketing, design, manufacturing engineering and factory operation, all within a financial and business context. A thorough theoretical basis is combined with the opportunity to put ideas into practice in industry.

When students finish the course they are much sought-after for demanding jobs, not only in manufacturing industry but also in other branches of engineering, consultancy or commerce, and a range of unrelated fields. Students are well-placed to start their own companies, having not only gained a thorough understanding of how business works, but also having made contact with a large number of companies throughout the course.

The culmination of the MET course is the international research programme and tour, which is entirely organised by the students. Previous tours have included 'Baltic Horizons – The accession to the EU of the Baltic States' in 2003 and 'Enter the Dragon – Entry by China into the WTO' in 2002.

## **Institute for Manufacturing**

The Institute for Manufacturing (IfM) aims to assist companies to grow and to increase their competitiveness across the business cycle, thereby helping industry to create wealth more effectively.

Established in 1998 as part of the University of Cambridge, the IfM employs approximately 150 people delivering innovative research, high-calibre education and valuable services to industry. Specialist areas include Strategy and Performance, International Manufacturing, Economic Policy, Technology Management, Industrial Sustainability, Production Processes, Decision Support, and Automation and Control.

## **Further Information**

George King  
MET Research Programme President  
Institute for Manufacturing  
Mill Lane  
Cambridge  
CB2 1RX

Telephone: +44 (0) 1223 338078  
Fax: +44 (0) 1223 338076  
Email: [georgeking@cantab.net](mailto:georgeking@cantab.net)  
[www.ifm.eng.cam.ac.uk/met/tour04](http://www.ifm.eng.cam.ac.uk/met/tour04)