Britain's 'CoPS' Put Us On The Map

Amidst the current global economic crisis, rumblings of discontent over the decline of the British manufacturing industry abound. Received wisdom now dictates that Britain is a country which 'doesn't make anything anymore', that it has become economically reliant on the services it provides rather than the goods it produces.

According to Professor Mike Hobday, based at SPRU, this is highly misleading. He claims 'it is not just a very old fashioned view - it is also incorrect and self-defeating'. Not only does Britain lead European production and exports of goods such as colour TVs, semiconductors and personal computers, Britain also produces a large number of so-called 'CoPS'.

CoPS (Complex Products and Systems) are very high value products, systems, constructs, networks and capital goods, often involving a great deal of software and information technology. Examples include flight simulators, virtual reality equipment, intelligent buildings, aircraft engines, telecommunications exchanges, ships, tailored software packages, business information networks, Internet super-servers and many more. CoPS form the backbone of the modern economy and major CoPS producers contribute approximately 11% of UK GDP, employing between 1.4 million and 3 million people (depending on definitions). CoPS underpin industries and services as diverse as transport, construction, telecommunications, banking and retail.

In production, CoPS are very different from mass produced goods, like cars or bicycles. They are produced for specific customers as one-offs or in small batches by groups of suppliers working closely together on projects, often as a temporary team. The processes of production and innovation are therefore very different in CoPS - and so is good management practice.

To generate a proper understanding of CoPS, Mike, together with Professor Howard Rush of the Centre for Research in Innovation Management (CENTRIM) at Brighton University, established the CoPS Innovation Centre. Funded mainly by the ESRC and also increasingly by other sponsors, CENTRIM and SPRU staff work closely with several global suppliers of CoPS, including Ericsson, Rolls-Royce, GKN, C&W, Oxford Instruments and BAA, the company responsible for baggage handling systems at Heathrow's Terminal 4.

The aim of the Centre is not just to conduct original research into how innovation works in CoPS, but to 'close the loop' between research and business practice - by working with managers to develop new tools to improve innovation.

Although the CoPS industry is vital to the British economy there are many innovation management problems. Mike and Howard's team of 10 researchers have been scrutinising industry best practices and modern methods of production, 'holding a mirror' up to these organisations. Research shows that the UK is ahead of most of East Asia in CoPS. "We are at an advanced stage and we should be looking forward to building on all these strengths. But we need to map and measure them, and see what makes these industries tick", says Mike. Continued on page 3.

Sports Service Award

CCS student Michelle Broderick has won £250 towards her research into women and dance. Michelle, a third year sociology student, had to write a 2,000 word proposal to win the money for her final year project into women's perceptions of dance. To determine the way women perceive dance she will use some of the money to attend performances and interview professional dancers.

The award was part of a £2,500 grant from the Health Education Authority to Sussex and Brighton Universities to promote the nationwide Active for Life campaign. The University was one of five recipients of the lucrative grant, which attracted over 200 bids. In order to encourage and develop young women's exercise and activity, the Sportcentre has used the grant for a 'Dance and Movement Festival', the production of an Active for Life Directory, and a research project on young women's exercise regimes. The project involved sending out hundreds of questionnaires with the prize of an abdominal trainer as an incentive. This reward prompted an extremely successful return, as well as one winner, Lucy Stevens, who can now exercise her abs to perfection in her bid to be 'active for life'.

Michelle Broderick (right) pictured here with Lucy Stevens and the abdominal trainer donated by Forza Fitness.
Hairy fruit-flies fight disco deafness

What is the connection between the hairs on a fruit fly's back and the intricate workings of the human inner ear? The answer is that both perform a sensory function which depends on a stereotyped pattern of hairs laid down during development. The underlying mechanisms for the formation of these patterns, according to Natasha Warner of BIONLS, are remarkably similar.

During the development of a complex living organism, be it human or fruit fly, genetically identical cells turn into a huge variety of different types of cell, a process essential for the formation of the tissues and organs which make such a creature possible. How this happens is one of the great wonders of biology. What, for example, makes one cell become a brain cell and another a blood cell? What controls the patterns that emerge during development?

These are huge questions, much too big to answer at one bite, and for her DPhil Natasha has concentrated on a small part of the process, trying to find out why hairs are produced by some cells on a fly’s back but not by others. Hair formation requires a signal, the product of a gene called wingless, but only certain of the cells in which this gene is activated turn into hairs. In experiments, this gene can be activated in patches of cells in which it is not usually turned on; such patches form hairs but only along one edge. To form a hair, the cell requires another signal, the product of a gene which is switched on in more posterior cells. Only where the two signals meet do you get hairs.

The mechanisms which control this type of development seem to have changed very little during evolution and very similar genes and signalling mechanisms have been found to play an important part in the patterning of hairs in the mammalian inner ear. It seems likely, therefore, that the work now being carried out by Natasha and colleagues will throw valuable light on the developmental mechanisms which lead to the patterning of the sensory organs of the ear. Fruit-fly research may eventually make it possible to regenerate damaged hair cells in humans and to repair the damage wrought on the young by their taste for loud music.

Putting science into perspective

John Murrell, Dean of CPES, discusses the pioneering school course Principles and Perspective in Science:

It is one of the strange anomalies of the Sussex curriculum that, whereas all science students do some courses in the arts or social studies, few arts students have the opportunity to do a science course. Whilst I would not want to go back to the compulsory arts/science scheme of the early days of the University, I do think it is unsatisfactory that we do not provide the opportunity for every student in the university to acquire some knowledge and appreciation of science.

We are however, starting to make a move. A course called Principles and Perspectives of Science that I give for students in CPES has been taken, in the past two years, by some students in SOC and CCS as part of their School programmes. The course aims to give a broad understanding of the principles of science and the scientific method, to describe how science got to its present position, and to speculate on where it might go in the future; to show how science influenced our industrial development, our society, culture and religion, and to raise questions about current controversial matters like genetic engineering and the dominance of the computer. The course does not impart hard science, but it does not duck descriptions of hard science; it is possible to see the ideas behind Einstein’s theory of relativity without knowing advanced mathematics.

Science is part of our culture and the major figures that developed it historically are as important as any soldier politician or royal figure. Moreover, science was widely seen as part of our intellectual life before the beginning of this century; in the early 19th century it was seen, for example, as an important stimulus for the literature of the time. It pleases me now to see a resurgence of interest in science as we approach the end of the century.

The case hardly needs to be made that we now live in a science-based world and that the movement towards this position began early in the 17th century. By the 19th century, science and science-based engineering was having a big impact on the industrial base of the western world, and our industries and our environment are now almost totally dominated by science. We need reminding that such commonplace things as a public electricity supply and radio are less than a hundred years old; that the medicine we get now is largely the product of the past fifty years and that Molecular Biology will change our lives in the next fifty years. Science is central to what we eat, how we live and how we develop. To study the principles of science is to get to the heart of what we are and what we might become.

Miscellaneous

Falmer Sports Complex

The new Fitness Room in the Falmer Sports Complex is now due to open on Monday 8 February 1999 not on the 1 February as suggested in the Bulletin two weeks ago.

Free Tickets at the Gardner Arts Centre

See Fine Frenzy produced by the Shobana Jayasinghe Dance Company on Thursday 4 February at 7.45pm. Free tickets available for the first 10 people who turn up at the box office waving a copy of the Bulletin (1 ticket per person).

International Wive's Group

The International Wive's Group is a social group of International students' partners who meet on Thursday morning between 10 am and 12 noon in the York House TV room in term time and aim to make friends by using and improving their English. From time to time we plan visits to local places of interest, or invite someone to talk to the group on a topic of general interest. Please come along and meet us on Thursday mornings. The group is organised by Fran Mortimor, who provides language activities, refreshments and interesting company. Any further enquiries from Gillian Hall at York House Reception. Tel (67)8323.
Research Funding Opportunities

This is a selection of Research Opportunities. More details of these and other opportunities are available from the Research Grants and Contracts Office, contact Debbie, ext 3812 or email: D.Foy-Everett@sussex.ac.uk. For an extensive listing of funding opportunities see REFLUND on the Research Web site: http://www.sussex.ac.uk/Units/research or SUSIS Home Page, under Research.

The British Academy invites applications for up to 30 postdoc fellowships, tenable for 3 years from 1 October 1999 in a UK university. Starting salary is £17,570 p.a. Designed to enable scholars to pursue independent research and obtain teaching experience in humanities and social sciences. Deadline 28 February 1999.

EPSRC invites applications for its Advanced Magnetics Programme. Four key themes for research are: structured films; information storage; advanced hard and soft magnetic materials; and characterisation of advanced magnetic materials. Deadline 26 March 1999.

The Nuffield Foundation is offering awards of up to £5,000 to newly appointed lecturers in Science, Engineering and Mathematics Departments. Aims to assist early stages of independent research. Deadline 30 March 1999.

BBSRC has issued a call for proposals under the heading Mathematics and Modelling of Agriculture and Food Systems. The initiative is designed to change the way we analyse and predict the behaviour of agricultural systems and the food chain. For research areas see RGCO. Deadline 12 April 1999.

Royal Commission for the Exhibition of 1851 offers Industrial Design Studentships to post-grad scientists and engineers wishing to develop their capabilities in industrial design. All course fees will be paid with a stipend of £8,000 p.a. Deadline 23 April 1999.

EPSRC announces a new Responsive Production Initiative. Collaborative proposals between academia and industry are invited with the aim to increase UK manufacturing competitiveness. Available funds total £4.5 million. For research areas see RGCO. Deadline 30 April 1999.

BBSRC invites applications for proposals under its Investigating Gene Function initiative. £15 million in funds is available. Key research areas are in-depth analysis of commercially important and representative organisms, the creation of gene libraries and the provision of state of the art technologies. Deadline 14 May 1999.


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1998 Wiley Chemistry Book Prizes

Prof John Marrell, Phillip Rowley, Gareth Minton, Katherine Arensens, Rupert Sims and Mark Smith

This is the fifth year that the publisher John Wiley have donated books to the Chemistry Subject Group for the best performances in the first year CPES course 'Molecular Structure'. John Wiley's British headquarters are in Chichester and they have had close connections with many members of faculty at Sussex University. Their donation is approximately £220 of chemistry text books to each of five students, which is an extremely valuable contribution to their studies.

Britain's 'CoPS' Put Us On The Map

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The CoPS team has pinpointed nine major 'hot spots' (problem areas) shared by producers, which often result in projects finishing late and over-budget. The downsizing of the 1980s has left many companies short of experienced managers and engineers. Also, management systems and tools often fail to account for unpredictable, 'emerging' events. As Mike says, "One of the biggest problems is that most management thinking and tools, particularly IT, assume that people are rational and will behave in a rational manner. But the informal human side is often neglected." Therefore, the Centre has developed tools to reconcile the official 'hard' systems with the creative 'soft' human needs of people working on CoPS projects, in order to improve innovation, effectiveness and efficiency.

The Centre has just started its third full year, and the CoPS team at SPRU and CENTRIM are hoping to bring even more high profile clients on board. Having negotiated an agreement to analyse and 'capture' the technology and management practices of the Millennium Dome and the 2002 New Commonwealth Stadium at Manchester, the CoPS team is putting Britain on the high technology manufacturing map of the future.

Staff Development Workshops

On Site Courses for Non-Teaching Staff - Spring Term / Easter Vacation 1999

Time Management (Course 1) Tuesday 16 February (9.30 - 1pm)
Customer Care (Course 1) Thursday 18 February (10 - 4pm)
Supervisory Management (2-day Course) Tuesday 23 February (10 - 4pm) and Tuesday 2 March (10 - 4pm)
Report Writing Thursday 25 February (9.30 - 1pm)
Training and Coaching Staff Thursday 4 March (9.30 - 4.30pm)
Customer Care (Course 2) Tuesday 9 March (10 - 4pm)
Time Management (Course 2) Thursday 11 March (1.30 - 5pm)
Equal Opportunities Awareness (Course 1) Tuesday 16 March (9.30 - 1pm)
Recruitment Interviewing for non-faculty posts Thursday 18 March (9.30 - 4.30pm)
Team Building Tuesday 23 March (9.30 - 4.30pm)
Equal Opportunities Awareness (Course 2) Thursday 25 March 1999 (1.30 - 5pm)

For further details and course outlines please see our web site at http://www.sussex.ac.uk/Units/staffing/staffdev/onsite1.html

Nominations for the above Courses (via Section Heads please) to Alison Lyner, ext 3868 (mornings) or Email A.M.Lyner@sussex.ac.uk asap . Priority will be given to people already on waiting lists. Courses will only run if sufficient places are booked.
Lectures, Seminars, Colloquia

Monday 1 February
4.00pm Sociology and Social Psychology Seminar: Jenny Shaw, Class, social exclusion and Marks and Spencer's. D310.
4.40pm Analysis Seminar: S. Velani (Queen Mary), A problem in simultaneous Diophantine approximation. Pevensey 1 2A2.
4.30pm Neuroscience Seminar: Andrew Jarman (Edinburgh), Control of early neurogenesis in drosophila. BLR.
5.00pm Women's Studies Research-in-Progress Seminar (in conjunction with Queory): Sasha Rosenell (Leeds), Queer Tendencies: Sexual transformations of modernity. D610.
5.00pm The Centre for Optical and Atomic Physics Seminar: Colm Whelan (Cambridge) (e,2e) distorted waves, and all that. Pevensey 1 2A1.

Tuesday 2 February
12.30pm Sussex Life History Research Network Seminar: Al Thomson, Flying to the moon with a pair of fairy wings: Teaching oral history in higher education. Mass Observation Archive.
5.00pm Social Anthropology Graduate/Faculty Seminar: Philip Thomas (UCL), Place, landscape and the legacy of colonialism in Madagascar. C219.

Wednesday 3 February
1.00pm IIDS Seminar: Barbara Evers (Manchester), The Economy as a gendered structure. Uganda. Room 221.
4.00pm Music Research Seminar: Robert Adlington, The Music of Harrison Birtwhistle, Recital Room 120, Palmer House.
4.00pm CMAIA Colloquia: Prof M. Huxley (Cardiff), Lattice points and plane curves. Pevensey 1, 1A1.
4.40pm History of Art Research Centre Seminar: Stephen Bann (Kent), Battles in paint and print: from Carle Vernet to Paul Delaroche. C219.
5.00pm Physics and Astronomy Colloquium: Professor Wilson Sibbett (St Andrews) Ultrafast laser science - in & out of the research lab. Pevensey I A7.
5.00pm English Graduate Colloquium: Nicholas Royle (Stirling) Extraordinary conduct: A Passage to India. D640.

Thursday 4 February
11.30am Economics Seminar: Duncan Black (LSE), Local knowledge spillovers and inequality. D310.
4.00pm Geography Research Seminar: Rory Mortimore (Brighton), The Sussex Chalk. D340.

4.00pm Experimental Psychology Colloquium: Matthew Rushworth (Oxford), Different types of spatial representation and attention in the parietal cortex. BLR (EP 3.9).
4.00pm CPES Colloquium: Tim Palmer (European Centre for Medium Range Weather Forecasts), Forecasting El Nino and its global impact.
5.00pm French Seminar: Simon Wortham (Portsmouth) Van Gogh shoes, or does the University have two left feet? A71.
5.00pm History Work-in-Progress Seminar: John Lonsdale (Cambridge), Conflicting languages of community and accountability in Kenya after the second world war. A155.
6.00 pm Meeting House Lecture: Rabbi Lionel Blue and Sister Margaret Shepherd, Praying as this Millennium ends. The Meeting House Quiet Room.

Friday 5 February
2.00 pm SPRU Seminar: Michael Mabe (Elsevier Science Ltd), The Journal past, present and future. EDB Lecture Theatre (Room 121).
4.00pm Applied Mathematics and Numerical Analysis Seminars: Adrian Hill (Bath), Quantitative perturbation theory for the convection-diffusion equation. Pevensey 1, 2B13.
4.00pm Astronomy Centre Seminar: Professor Leon Lucy (Imperial), The unappreciated power of the Monte Carlo method. Arundel 401.

CDU Info
Places should be booked in advance at CDU.

Industrial Placement Company - 3 Feb 6.00pm, CDU. The company will be talking about the benefits of short term work, and how to find it.

Postgraduate Journalism Course at Brighton College of Technology - 4 Feb 5.30 pm, CDU. Find out more about this NCTJ approved course and about their radio journalism course.

Reed Graduates - 8 Feb 5.30 pm, CDU. How to use recruitment agencies generally and how Reed can help.

Miscellaneous

SATURDAY MORNING CHILDREN'S DANCE CLUB with Wish commencing 20 February (ex Ballet Mistress for the Royal Ballet) Also half term session on February 18. Please contact Karen Dunster Sportcentre 678228 or email k.Dunster@sussex.ac.uk.

EXCAVATION AT HECKFIELD HAMPSHIRE of a post-mediaeval manor house from the 29 May to 13 June 1999, by North East Hampshire Historical & Archeological Society. Contact Don Woolhead, on 01273 30356. Cost Student Fee £45. Diggers (NEHAS Membership) £7.50.

OPEN LANGUAGE STUDIES
Need to brush up your grammar? Grammar workshops for 'A' level students. Saturday 13 February - German and Spanish. Saturday 20 February - French. Cost: £25.

Easter 'A' Level Courses in French, German and Spanish - to practise speaking and listening skills. 3 day courses from 7 - 9 April. Cost: £70. Contact The Open Course Assistant on ext 7258 for details.

Small Ads
FOR SALE: Nissan Micra GSX 11, F reg(89), 1 year MOT, 72000 miles, service history, s/r, stereo, metallic green, £1050 ono. Tel Aydin on 887605 after 6pm or e-mail a.demircan@sussex.ac.uk.

FOR SALE: 3/4 bedroomed house, Hanover - Cobden Rd, large garden, stripped floors, cast iron fireplaces, spiral staircase, roof terrace, £104,000 ono. Tel: 866661 eves.

TO LET: Italy - Flats on Lake Garda sleeping 2,4 or 6 available for holiday lets. Wonderful location, swimming-pool plus many other amenities. For more information, telephone 476813 or email mboice@sussexuniv.net.com.

TO LET: 3 bedroom house in Fiveeways area. Close to railway stations, shops, parks and schools. Please contact giasiagor@romarin.univ-ax.fr or tel 0334 4266829.

TO LET: 5-bed, 2-recep detached bungalow in Saltdene, GCH, nice views, close to 27 bus, shopping facilities and sea, £650 pcm (can be partly furnished) for 6 months or less, available mid Feb - early March. Family preferred. E-mail: Q.Tang@sussex.ac.uk. Tel 773161 (eve), ext 3062 (day).

WANTED: Person to connect PC in Ringmer (Nr Lewes) to Net and to create and help maintain a Website on a regular basis. Should suit COGS student with own transport (lifts may be possible). Pay on hourly basis. Contact Trevor Pateman on 813841.

TO LET: Spacious 2 bed house in North Laines, 5 mins from station, available 15 March £600 pcm excl. Tel: 884080.

AVAILABLE: Specialist language training in all fields of law for international students (u/g or p/g). General English also available. Qualified, experienced lecturer in Law and EFL. Tel: 487822, email leweslc@hotmail.com.

LOST: Has anyone found two silver rings I left in Arts C toilets last Thursday (21.1.99)? Please return them, great sentimental value! Maria Vergara, Tel 381394, email: m.vergara@sussex.ac.uk.

Bulletin
The Bulletin appears every Friday during term time with copy deadlines the preceding Friday lunchtime.

Please contact the Information Office in Sussex House on Ext. 8209 or Email: Bulletin@sussex.ac.uk.