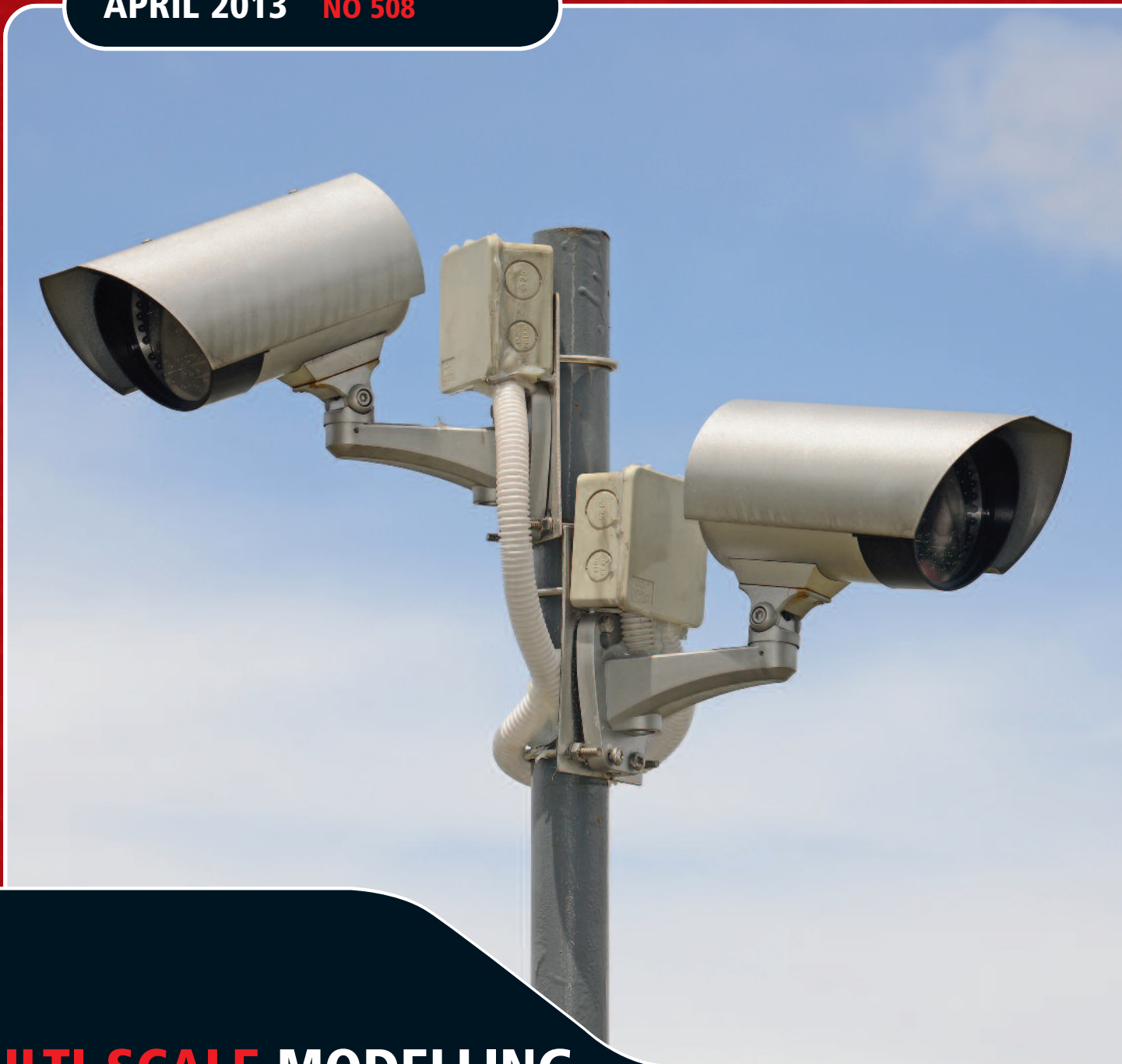
THE SCIENCE OF BETTER AT THE HEART OF ANALYTICS

INSIDE O.R.

APRIL 2013 NO 508

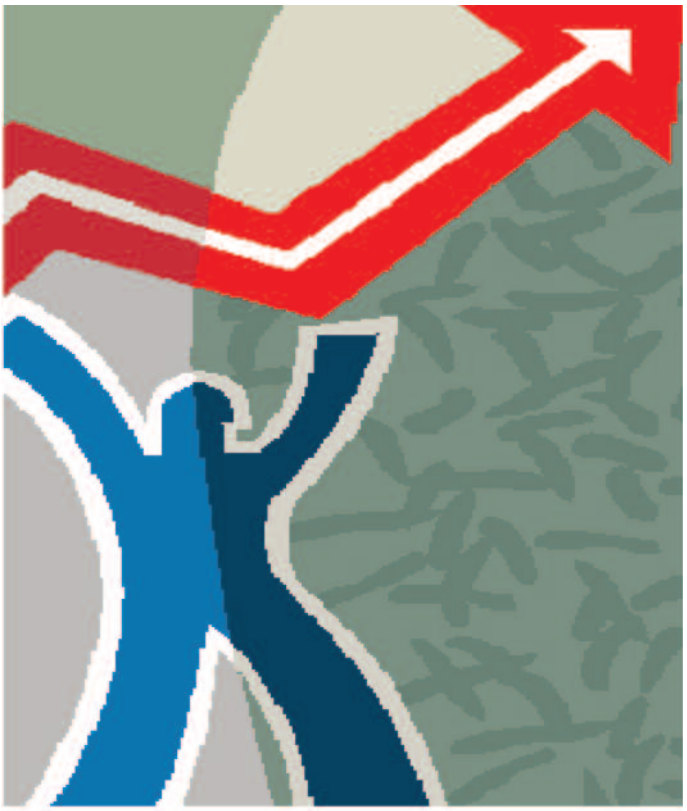


MULTI-SCALE MODELLING REVEALS SPREAD AND PREVENTION OF CRIME

: : INSIDE THIS MONTH : : : : :

THE OR SOCIETY

www.theorsociety.com



ADVANCE YOUR CAREER PROSPECTS

Accreditation: What it is and why you should apply

The OR Society's accreditation scheme enables members to enhance their career prospects by providing credible certification of their achievements in the field of Operational Research.

There are three categories of accredited membership:

Fellow (FORS) - for high achievers with at least ten years' experience
Associate Fellow (AFORS) - for those with a successful track record over at least five years
Associate (AORS) - for suitably qualified recent entrants
Candidate Associate (CandORS) - for those either completing a degree with a substantial O.R. content or starting their first employment in O.R. Candidate Associates are appointed a mentor to help guide them through the first couple of years in their O.R. career.

The substantial benefits of this recognised professional achievement include:

- an enhanced CV and post-nominal letters
- help in securing a job by demonstrating experience
- career progression through category upgrades

For full details of the Accreditation scheme, including criteria for each category and procedures, visit
www.theorsociety.com

EDITORIAL

JOHN CROCKER

Ever since I joined the OR Society, over 40 years ago, there has been concern about the number of members, or to be more accurate, lack of numbers.

Ruth Kaufman, Chair of the Publicity, Membership and Website (PMW) Committee has started a working group to look at how to attract more members and how to retain the existing members (in fact I wrote most of this article during the meeting but please don't tell Ruth). In 2012, the 'trade gap' was the biggest in the past decade; the number of new members was only marginally lower than other years but there was a mass exodus. If you can persuade any of your friends and colleagues to join then the OR Society will have a much louder voice and be able to offer a lot more for your money.

We also take a look at airport capacity in the UK, or, to be more precise, the Southeast and London area of the UK. Although I have not had chance to see any of the programmes yet, there also appears to be a new series on ants (on BBC4) which looks at how O.R. methods have developed from a study of these insects. It would seem, that amongst their many other attributes, they would make ideal husbands in so far as they appear to instinctively know when to do the housework, go shopping or tend the children, something I, alas, have never been good at even after 38 years of practice.

You can also read about the work of the ORiS task force. Sixth formers (I guess that shows my age as even when my daughters were at school, it was still referred to as this) will provide the next generation of members so the more that knows about the existence of O.R. and what it is all about, the more chance we have of recruiting some of them.

Tizard and Cherwell very seldom agreed on anything of importance but in this month's instalment there is an example of when they did and another of when they didn't. One was whether to bomb the dams on the Ruhr and the other whether to deploy 'windows' to confuse enemy radar – can you guess which was which. R.V. Jones was reputed to have said to Lord Cherwell, at the time, 'If I have got you [two] to agree on something then I have achieved a great deal'.

<OR>

CONFERENCE NEWS

EVENT:	YoungOR18 Conference	DATE:	9 – 11 April 2013	VENUE:	University of Exeter
EVENT:	KIM2013 Conference	DATE:	4 – 5 June 2013	VENUE:	Forest of Arden Hotel, Meriden
EVENT:	Advanced Analytics + Big Data	DATE:	12 June 2013	VENUE:	IET, London
EVENT:	IMSIO5 2013	DATE:	3 - 4 July 2013	VENUE:	University of Salford
EVENT:	OR55 Annual Conference	DATE:	3 – 5 September 2013	VENUE:	University of Exeter
EVENT:	Blackett Lecture	DATE:	28 November 2013	VENUE:	Royal Society, London

Developments in Analytics and Big Data – Adding Value

Operational Research – adding value in analytics. Over the last 75 years, Operational Research (O.R.) professionals have developed mature methodologies to analyse and use data that can **add significant value** in big data analytics. The aim of this event is to show how developments in Analytics are leading to **increased competitive advantage** in these challenging times.

Chair: **Geoff Royston** President, Operational Research Society

Confirmed Speakers:

John Hopes Lead Partner for Business Modelling, Ernst & Young, Vice President and Chair of the Analytics Group, OR Society
O.R., Data Science and Analytics: Maximising Value from Big Data

Gearoid Madden Accenture Analytics Innovation Centre, Dublin
The use of Analytics in Fraud Detection in the Insurance Sector.

Colin Shearer SPSS – data mining pioneer and developer of Clementine software
The 'Analytical Revolution': the Industrialisation of Advanced Analytics

Detlef Nauck, BT - Chief Research Scientist and BT's leading expert in data analytics
Predictive Analytics and Proactive Service – their impact on BT and new research developments

Fintan Galvin Founder and CEO, i01 – a leading Opensource Consultancy
Harnessing Search Engines, Analytics and Semantics for Competitive Advantage

Sanjit Atwal - CEO, Squawka
Analysing Premier League Player Value using Big Data

Details of remaining speakers will be available shortly
Book now online at www.analytics-events.co.uk

This event is subsidised by the OR Society to ensure excellent value:
Book and pay by 1 May for the early bird rate of £75+VAT

Wednesday
12 June 2013

9am to 5.30pm

Institution of Engineering & Technology
Savoy Place
London, WC2R 0BL

Fee £75 (plus VAT)
until 1 May then £150 (plus VAT)
Includes buffet lunch

THE OR SOCIETY

This event is sponsored, and subsidised by, The OR Society

For more about this event visit
www.analytics-events.co.uk

KEEP IN TOUCH WITH WHAT'S NEW IN ANALYTICS
BY JOINING THE ANALYTICS NETWORK AT www.analytics-network.co.uk

Careers Open Day 2013

Come and meet the future of O.R. and Analytics

This event attracts around 300 students interested in finding out about careers and postgraduate study in O.R. and analytics.

- Are you looking to recruit graduates into O.R. and analytical based roles?
- Raise your profile with undergraduate and postgraduate students interested in careers in O.R. and analytics.
- Promote O.R. and analytical Master's courses.

In addition to the Careers Exhibition, the event includes a programme of informal presentations where graduates can listen to practitioners' first hand experiences of life working in O.R. This is an ideal opportunity for exhibitors to further promote themselves with the students.

The Open Day will be held at the
Thinktank, Birmingham
on Wednesday 20 November 2013

This fantastic venue is located in Birmingham's city centre with great transport links and parking on site, and will provide a great setting for our Careers Open Day. We'd like to offer you the opportunity to take a stand and inspire the next generation of operational researchers.

Early Bird booking
Reserve a stand by 31 August 2013 and pay just £280 + VAT (£320 + VAT thereafter).

Price includes lunch and refreshments, monthly feature in Inside O.R. up to the event and a follow up article, and a profile on our website. Confirmed exhibitors will be promoted to students prior to the event.

To reserve a stand please email your full contact details to Louise Orpin, louise.orpin@theorsociety.com

DISCOVERING WHY THINGS GO PEAR-SHAPED

JIM BRYANT

Understanding the delicate frontier between co-operation and conflict is key to managing situations ranging from hostage negotiations to steering a joint business venture or dealing as a parent with teenage tantrums. It's so easy to say the wrong thing at the wrong time!

However there is an analytical framework that can help anyone to make better sense of such rapidly-changing, multi-party situations and so be better placed to make more astute, well-considered interventions. Developed over the past two decades, confrontation analysis provides a toolkit based on systematic assessment of 'live' situations that highlights the pressures different parties are experiencing – which is often the root of their frustration and anger - and suggests ways in which these may be alleviated.

Jim Bryant, one of the originators of drama theory, will be running a one-day training event at the OR Society in Birmingham on Wednesday 24 April. Through practical modelling of current situations facing participants and their employing organisations, the workshop-based sessions will demonstrate ways of dealing with these specific challenges as well as indicating generic lessons in the effective management of collaborations. Interactive sessions will be complemented by a thorough introduction to relevant theory illustrated by examples drawn from such diverse fields as international relations, terrorist response, corporate strategic alliances, human resources management and health service delivery.

There are no prerequisites, but by the end participants should possess a working facility with a set of concepts that can be applied to model dynamic inter- and intra-organisational relationships in any context.

Communicating Strategically to Influence People
http://www.theorsociety.com/Pages/Training/Courses/3239.aspx
24 April 2013,

The OR Society, Birmingham

<OR>

YOUNGOR 18 - STILL TIME TO BOOK

9 - 11 April 2013, Peter Chalk Centre, University of Exeter, EX4 4QD, UK.

Don't forget to book your place at YoungOR 18 via our website at : www.theorsociety.com/YOR18

A summary of what's on offer:

- Our excellent Plenary speakers are Amanda Gregory, Geoff Royston and Elizabeth Shepherd.
- We have 6 exciting Workshops: How to get O.R. into the Maths Classroom; Mendeley, a New Disruptive Innovation; O.R. goes Social; O.R. Outside; The future policy influence of O.R. and Build your own Pub!
- A prestigious Career Panel discussing topical career issues followed by a question and answer session, who include:

Pavel Albores, Aston University; Mark Chapman, Prospect Recruitment; David Cope, Government Operational Research Service; Richard Hill, Atass Sports Ltd, Elizabeth Shepherd, Hotels.com and Peter Simpson, PricewaterhouseCoopers

Not to mention some evening networking fun with horse racing, dancing and gambling!

Thanks also to our sponsors:

Dstl is a trading fund of the Ministry of Defence (MOD), delivering trusted and often confidential advice and solutions on defence-related science and technology that impact on the security of the UK. Details of Dstl's current graduate vacancies can be found on our website at www.dstl.gov.uk/careers

Mendeley is a global research network with over 2.2 million users, with thousands more joining every day. As well as offering productivity tools that optimize the research workflow, Mendeley has created the leading Big Data platform for science.

Banxia Software Ltd develops and sells high quality decision support software (DSS) and audience/ classroom participation systems (variously referred to as PRS, CPS, SRS, EVS, ARS). Our offerings include Interwrite(tm) PRS, Impact Explorer(tm), Decision Explorer® and Frontier Analyst®.

Decision Lab is a pioneering consultancy which combines commercial acumen and specialist modelling expertise to support strategic, tactical and operational decision making. Our team of problem structuring, optimisation, simulation and business modelling professionals aims to significantly improve the strength and resilience of your medium and long term business critical decisions.

Prospect Recruitment is a niche consultancy specialising in the quantitative analytical arena, with our roots in the Operational Research/Business Modelling field going back over 35 years. The combination of this market focus and our consultants' extensive knowledge of this specialist arena, has successfully underpinned our recruitment activities, which span the full range of private sector industry and commerce.

WINDOWS 8 - THE CHALLENGE OF MOVING TO A NEW OPERATING SYSTEM

CHARLES MAYES, MANAGING DIRECTOR, DAV MANAGEMENT

Microsoft launched its new operating system, Windows 8, on 26 October 2012 promising to deliver substantial benefits.

So far, however, the uptake has been very disappointing. Not only has it not had anything like the impact that Windows 7 had three years earlier when it was launched, it also seems to have caused something of a decline in all Windows based hardware.

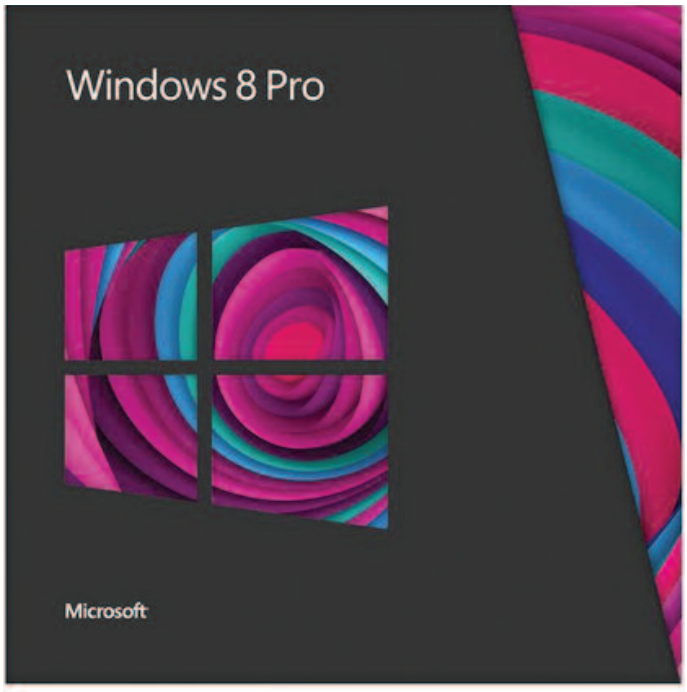
Recent figures show that Windows XP, a ten-year-old operating system, still commands a leading 45 per cent share of the operating system market. Unless the new features of Windows 8 are essential to your business, is the upheaval and extra work really worth the investment?

Organisations need to think seriously about what is involved in changing operating systems. There are a multitude of well documented failed Windows migration projects out there. Today's IT environments are unbelievably complex and littered with hybrid technologies. This means that for many organisations the biggest barrier to migrating to a new operating system is application compatibility. Some organisations have literally thousands of applications in use across large numbers of desktops.

When tackling a project of this nature, organisations should not underestimate the size and complexity of the task and the impact that will be felt by the business during the migration. If it is not very carefully planned the project is likely to lose its way and fail to deliver the benefits that made the business case. There is a good chance you will end up with a very large number of disgruntled users. As an aside, it can become a costly and draining business if there is a third party service organisation involved and contractual responsibility for sorting out such a confused state is not clear.

The good news is that with proper foresight and planning this scenario can be avoided. Questions that should be considered include:

- How will the migration impact the business? What are the change implications of migrating to a new technology/platform and how will the business benefit?
- Has the organisation really thought through its internal processes, user demands and requirements?
- Is the business really capable of moving to the new platform, how much will it cost and how long will it take?



- Are the existing applications compatible with Windows 8, or will upgrades and licence changes be required?
- Does everything need to be migrated or can we take the opportunity to rationalise applications that are not being used?

Clearly there are major organisation, process and cultural changes needed in order to drive through a successful migration project. Successful projects require careful planning and management and constant communication to enable the end goal to be achieved. This means ensuring that both operational and business teams are fully engaged and the resources are in place and ready to work on the most important applications.

Do not underestimate the size and complexity of the task. Make sure everyone knows what is happening, what the benefits will be and why it is important to the business to make the transition. Make sure, also, that everyone who is involved or may be affected is convinced of the benefits and committed to achieving them.

INVITATION TO BID TO PROVIDE OR SOCIETY TRAINING COURSES IN 2014

GAVIN BLACKETT, SECRETARY & GENERAL MANAGER

The OR Society's Training Working Group invites bids to provide training courses in 2014. All offers of courses will be considered, though there is no guarantee of acceptance.

For 2014, courses in the following areas are particularly encouraged:

- 'New' areas - help us keep the O.R. community fresh in its thinking;
- Courses relevant to analytics;
- Practical courses relevant to the issues of the day – doing more with less, efficiencies, reducing waste and duplication;
- Advanced courses in more traditional areas, which start from MSc level and take the subject to a specialist level; and
- Courses given by practitioners or those with a good practical knowledge of the subject.

Other courses which we know from experience are likely to do well include 'how to do it' courses such as 'How to build clever models with spreadsheets'. Generic courses such as 'Presentation Skills' are less likely to be accepted unless they have a particular O.R. theme or focus. There are plenty of big-time training providers who offer these generic courses at much cheaper rates than we can consider.

An information pack is available giving details of the Society's terms and conditions for course providers, including:

- the quality framework to which all tutors are expected to adhere;
- the impact of the trainer's fee on the delegate fee for the course and the likelihood of success of bids;
- the details of course content, target audience, etc, that tutors are required to provide.

In the past, the Society has experienced difficulty in promoting certain courses and in responding to queries about them, on account of the paucity of information supplied by course providers. Failure to provide adequate information may result in a bid being rejected.

Bids must be submitted on forms obtainable from and returnable to:-
Jennie Phelps at The OR Society, 12 Edward Street, Birmingham B1 2RX. Tel 0121 234 7818. Fax 0121 233 0321.
Email jennie.phelps@theorsociety.com.

Closing date for the receipt of bids is **26 April 2013**. Bidders will be notified of the outcome at the beginning of July.

<OR>

INTERESTED IN KNOWLEDGE MANAGEMENT? KIM2013 CONFERENCE 4 - 5 JUNE 2013

Whether or not you plan to present or just attend, don't forget to book your place at KIM2013 here:http://www.theorsociety.com/KIM2013

If you are presenting, you will need to submit the title of your presentation or poster and an abstract of no more than 150 words. Full papers for proceedings can no longer be accepted.

The Knowledge and Information Management Conference (KIM) will be held at the Forest of Arden Hotel & Country Club, Meriden. The Theme is 'Sustainable Quality' and this is relevant to organisations and individuals working in any sector of the economy. Knowledge management has become a key process in understanding organisations and their use of resources and, ultimately, quality is a major differentiating factor when considering goods and services.

The very exciting KIM programme includes: Three excellent plenary speakers (see below), a whole host of presentations, KMRP panel discussion, KMRP 10-year celebration drinks reception – kindly sponsored by Palgrave Macmillan, Conference dinner, great accommodation and, of course – last but not least – the infamous bar quiz!

KIM2013 is fortunate to have three highly experienced and knowledgeable plenary speakers, who provide a mix of academic and practitioner perspectives. These are, in order of presentations:

- Professor John Edwards, Executive Dean, Aston Business School and Editor of *Knowledge Management Research and Practice* (KMRP).
- Trevor Howes, Director, BRM Fusion Ltd.
- Dr. Jay Liebowitz, Orkand Endowed Chair in Management and Technology, The Graduate School, University of Maryland University College

We look forward to receiving your booking and to seeing you at the Conference.

Hilary Wilkes

<OR>

IFORS PRIZE FOR O.R. IN DEVELOPMENT

INVITATION AND CALL FOR PAPERS

The Prize will be awarded during the 20th Triennial conference on 'The Art of Modeling' to be held in Barcelona, Spain from 13-18 July 2014.

- Grand prize of US$ 4,000.00 and a runner-up prize of US$ 2,000.00
- Finalist papers will be considered for publication in International Transactions in Operational Research (ITOR) subject to T&C.

Topic of paper

- The paper describes a practical O.R. application in a developing country, conducted to assist a specific organization in its decision-making process with regard to education, health, and other basic services, water, technology, resource use (physical or financial), infrastructure, agricultural/industrialization, environmental sustainability with original features in methodology or implementation for development in developing countries. The idea is to optimize the development with the constraints and limited resources.
- The paper includes some description of the application's social context and its impact on the decision making process or on the organization for which it was conducted. Where appropriate, the relevance of the country's state of development to the study is addressed. A stress on developmental issues will be an important factor in the judging. Papers of a purely technical nature, or those, which have no relevance in the developmental context, will not be considered.

Judging Criteria

- Qualifying papers will be evaluated on the following criteria: problem definition, creativity and appropriateness of approach, MS/OR content, stress on developmental issues, innovative methodology, impact of the study, paper organization and structure, participation of local researchers and quality of written and (if selected as finalist) oral presentation.

Other Information

- Principal authors and presenters of any nationality are welcome. At least one principal author must attend the conference to present the paper
- Finalists' registration fees will be sponsored by IFORS. Grants may be available.
- All contributions must be submitted before 30th November 2013 via http://mc.manuscriptcentral.com/itor, indicating in their cover letters that they are intended for this competition.

<OR>

FLYING TONIGHT

JOHN CROCKER

Heathrow, the UK's premier airport, has reached capacity at around 69 million passengers a year.

Gatwick, the UK's second largest airport is also almost at capacity with 34-35m passengers a year. It has the world's busiest single-use runway operating 53 flights per hour out of a maximum capacity of 55. Stanstead, Luton and City airports are expected to reach their capacities within the next 15-30 years. These five airports handle over 60% of UK passenger movements. They also handle a great deal of the UK's air freight. According to Charles Meyer (ibid) Heathrow is also cited by businesses of all types as one of the primary reasons they have chosen to locate in the Thames Valley/M4 corridor.

The fact that there has been a lot of debate and that there are two rival factions - business and environmentalists/individuals – is of no great surprise. Perhaps the biggest surprise is that whilst a Labour Government supported the proposed enhancements to Heathrow, the Coalition Government reversed that decision albeit to await a further inquiry (under the chairmanship of Sir Howard Davies).

Politics aside, there are some other rather interesting factors. The first is that in August 2012, the Department for Transport (DfT) predicted that passenger numbers at UK airports were likely to rise from the current 219m in 2011 to not far short of 800m by 2030 (an annual increase of 7%). However, by January 2013, these numbers had been revised down to just 315m by 2030 (an annual rise of just under 2%) and to only 445m by 2050 (60% of the 2030 prediction made in August). It has often been said that a new motorway does little to reduce traffic on other roads; it simply generates new traffic. One suspects something similar is the case with airports and airport capacity.

Heathrow is primarily concerned with long-haul, scheduled, business, and inter-city flights. It is also a major hub with a very large proportion of the passengers transferring from one flight to another. Gatwick, by contrast, concentrates more on short-haul, low-cost and chartered flights and is Europe's largest 'point-to-point' or single destination airport.

Both Heathrow and Gatwick have room for an additional runway but naturally there is considerable opposition locally from both residents and environmentalists. Building a new airport in the Thames estuary to the east of London would certainly increase capacity but it would also have a massive impact on the natural environment. River estuaries are homes to large birds which are a major hazard to jet engines. The Thames estuary is not an easy place to get to. Extending the 'Great Western' line through Paddington would seem the most sensible but at what cost?

None of the solutions are cheap. All would take many years and a very hard fight. But can the UK afford not to increase airport capacity in this region. Business is already suffering. There have been many attempts to try to move the centre of gravity away from the south-east but these have proved ineffective.

This is clearly a problem which calls for an Operational Research approach but will Sir Howard Davies recognise this?

CRASH COURSE TO BUILD YOUR O.R. TOOL KIT

JENNIE PHELPS

Do you, or any of your colleagues, want to develop your skills in a wider range of O.R. techniques than the ones you use every day?

The OR Society's five-day course 'Introduction to O.R I' (Part II runs in September) provides a thorough introduction to the process of O.R. and a wide range of the techniques available.

Frances O'Brien

Stewart Robinson

This very highly-regarded training programme, which has been designed by Frances O'Brien and Stewart Robinson, is a crash course in some fundamental O.R. techniques and, consequently, it's intensive and covers a great deal of material.

Although many delegates are relatively new to the field of O.R. the Introduction to O.R. course is also valuable to practitioners who specialise in a few techniques but would find some sound understanding of others helpful. Feedback from previous years suggests that the course provides a solid introduction to new techniques that the more experienced can add to their O.R. tool kits as well as offering a great starting point for relative a newcomer to the field.

The topics covered in 'Introduction to O.R. I' include statistical methods in O.R., sampling and regression, simulation, optimisation and (meta-) heuristics, statistical methods in O.R. and forecasting. On most days attendees get the chance to use recognised software for performing each technique.

Each day in the course covers a different set of topics and is led by an expert in the relevant field from one of the UK's top Business Schools. The days are generally a mixture in format between lectures from the demonstrator and more interactive problem-solving and group work.

On completing the course, you'll be able to identify the suitability of a technique for a problem situation and be able to apply those techniques. To make the educational experience personal, numbers attending are usually kept quite small so it's a good idea to book early!

The course runs from 15-19 April in the OR Society's training suite in central Birmingham. The fees are £2,850 + VAT for OR Society members; £3,100 for non-members. Book online at www.theorsociety.com , contact Jennie Phelps on +44(0)121 234 7818 or email jennie.phelps@theorsociety.com.

<OR>

BLACKETT MEMORIAL LECTURE

A DATE FOR YOUR DIARY!

The Society is pleased to announce that the 2013 Blackett Memorial Lecture will be given by:

David Spiegelhalter FRS OBE

Winton Professor for the Public Understanding of Risk, at the University of Cambridge

The suggested title of the lecture is:

Communicating risk and deeper uncertainty

Thursday 28 November 2013

at

The Royal Society, 6-9 Carlton House Terrace, London, SW1Y 5AG

Lecture at 4.30pm, tea and biscuits at 4.00 pm, drinks reception after the lecture.

Booking for this free event will be opened online nearer the date of the talk.

<OR>

SOCIETY'S ARCHIVE AND LIBRARY

MIKE WRIGHT

I suspect that many members are unaware that the Society possesses an Archive and a Library. These are very underused and have been almost ignored by the Society for many years. Please let us have your views about these resources – and if you have any potentially interesting Archive material we would love to receive it.

The **Archive** is held at Warwick University's Modern Records centre, comprising 22 separate collections of documents. One is OR Society material (in the early days it was known as the 'OR Club' – did you know that? I didn't!). There are some reports from industrial O.R. groups, including the precursors of British Airways, BEA and BOAC ('Better On A Camel'), and various miscellaneous items including obituaries and personal papers. The only non-UK collections are from IFORS and NATO. Much of the material makes for fascinating reading – it would be very easy to spend many enjoyable hours there.

Almost everything is hard copy, with just few 16 mm. tapes and some videos. While it is great to hold the old reports, it may be sensible for the archive to become partly or even wholly electronic. Documents could be digitised, though we would not envisage throwing anything away.

The collections are fascinating to browse, but they are all rather old! They range from 1940 to 2004, with many collections petering out in the 1970s. I believe – and, more importantly, the Society believes – that this Archive needs to be reinvigorated, and this is where you, the members, come in. We are appealing to you for more material, hard and/or soft copy, so that the Archive can become a substantial historical record covering the practice of O.R., mainly but not exclusively in the UK. Have you got any reports, articles, photos, or anything else that could be of historical interest? If so, please contact me at m.wright@lancaster.ac.uk.

The **Library** exists within Brunel University Library, having moved from Imperial College about ten years ago, with 1679 books (1319 titles) and copies of 77 journals. Any member may use it, but almost none does. The books are mainly old academic O.R. text books and collections of papers, with a few newer titles that are used by Brunel students, but there is the occasional gem in there (e.g. 'Operational research against the U-boat' by Conrad Waddington). There are almost no books written this millennium.

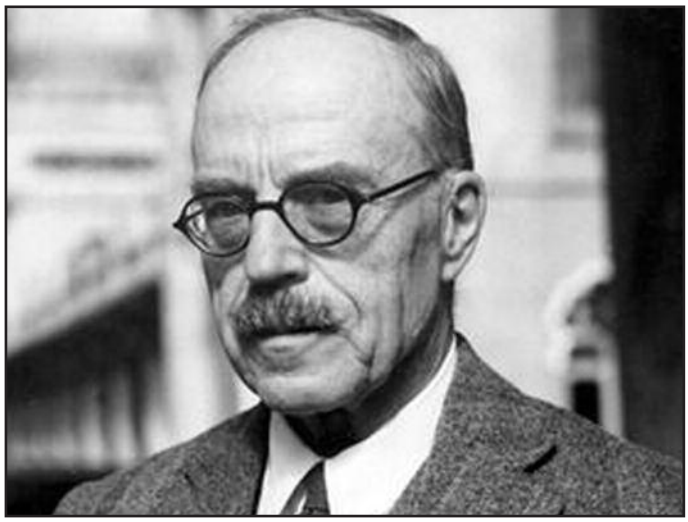
The Society has decided to discontinue ordering any new journals, since many of them are very expensive, and it appears that they are only being used by Brunel staff and students. It is also not buying any new books for at least the time being, pending a decision as to whether it is worthwhile.

We would like to have your views on this. If you want to access an O.R. book, would you consider travelling to Brunel University for it? It has been suggested that, for most people, it would be a lot cheaper and quicker to order it on Amazon, for example. If we were to close the library, again we would not throw anything away, since several of the books are classics of a kind and of potential historical interest; we would probably move the books to the society's own premises in Birmingham. Those with a particular interest in browsing the collection would be able to do so there.

SIR HENRY TIZARD PART 9

JOHN CROCKER

In August 1942, just before he became President of Magdalen College, Oxford, Tizard inaugurated a series of meetings between members of the three services who had become involved in Operational Research.



The work he had initiated at Biggin Hill (i.e. the Biggin Hill Experiment) was really the start of O.R. Rowe at Telecommunications Research Establishment (TRE) saw the value of this approach and created a scientific base within Fighter Command in 1939. In mid-1940, 'science' reached Bomber Command and in August Blackett was appointed as Scientific Adviser to General Pile where he established what became known as the 'Blackett Circus'. Later Blackett introduced O.R. into Coastal Command and the Admiralty. Tizard also recommend the use of statistical methods to evaluate the effects of bombing in the Middle East which was subsequently carried out by Professor Zuckerman.

In June 1941, Lord Hankey created an RDF Policy Committee to which Air Marshall Joubert was appointed as Chairman. However, he was then posted to A.O.C-in-C Coastal Command where it was clear that there was too much work for him to be able to allocate sufficient time to the RDF committee. It was then decided to appoint Tizard as the new Chairman. The terms were soon extended to include not just RDF but also radio and jamming.

Not long after this it came to Tizard's notice that H_2S – the new bombing aid – was being developed but without any involvement of this committee. This prompted him to write a letter to ACM Freeman complaining about this situation and that the decision to proceed had come from Downing St and Lord Cherwell. 'I do feel quite seriously […] that it is up to C.A.S and yourself, not to mention the Secretary of State, to decide whose advice they really want. […] The technical developments which have been sponsored and pushed from Downing Street have, taken as a whole, proved, as I expected, to have wasted time, money and energy, on a large scale.' The conflict, however, was not simply between two scientists (Tizard and Cherwell) but also involved many others all with often conflicting requirements.

An example of this was the use of 'window' – tin-foil strips to confuse enemy radar. This counter-measure had been known about for many years. The problem was that if the Allies used it, it would not be long before the Germans would work it out for themselves and, at the time, there was no known counter-counter-measure. The Allies could not afford to have their own radar jammed in this way so it was put on hold. However, when the Allies started going on the offensive and found that the Germans had developed their own radar capability which was leading to significant losses of bombers and more critically bomber crews there was a call to resurrect it. Before Tizard could organize a full trial to determine what the effects would be if the Germans started to use this device, the Chief of Air Staff had decided to start using it. Tizard called an emergency meeting of his committee and put forward their concerns regarding what might happen if the Germans decided to use 'window' during their invasion of Malta, Gibraltar or even Britain. Tizard felt that the potential disadvantages of using 'window' should preclude its use unless casualty rates of bomber crews increased significantly – a view held also by Lord Cherwell (one of the rare occasions when both were substantially in agreement). Intelligent reports from Germany indicated they were already familiar with the effects of aluminium foil so Tizard reversed his decision but Cherwell was sceptical about the report. In the meantime, Bomber Command dropped its request in favour of other methods and it was not until 15 July 1943 that Churchill 'open[ed] the window'!

In August, Tizard took a well-deserved break in Cornwall. During his absence there was a total re-organisation which led to the committee of which he was chairman being elevated in status to the point where it demanded a Minister of the Crown as chairman. Unfortunately, this fact had not been relayed to Sir Henry who, naturally, reacted rather strongly when as he thought his services were no longer required.

However, after a meeting with Churchill and a letter from LLewellin, Tizard agreed to serve on the new Radio Board under LLewellin (along with Cherwell).

In August 1943, he was asked by an interviewer whether he was in Magdalen for good. His reply was with a broad smile, 'Yes, whatever 'good' may mean'. But, he soon realised that he really did not want to be away from the action (like some of his fellow dons).

Indeed, the President's Lodgings became something of a 'bus stop' with a stream of visiting scientists, Air Marshalls, politicians and assorted V.I.P.'s.

As President, he foresaw three issues: financial problems for the colleges (although Magdalen would probably be less affected than most); a greatly increased number of potential graduates and; an anticipated expansion of university education. President of Magdalen was very different from being Chairman of [government] Committee or, indeed, Rector of Imperial College. A colleague noted that he was not entirely happy, being a bit nervous and even confused. 'It may well be that he had been so much in the wider world that College affairs seemed rather trivial. Some of us suspect that he was right.'

He noted that past members of the JCR had owed £1500. He subsequently passed a rule that members of JCR would have to settle their JCR debts as well as any College debts before they would be presented with a degree. He also combined the two Bursaries with the Senior Bursar an Official Fellow being generally responsible whilst the Junior Bursar would be responsible for domestic organisation. He noted that Magdalen was one of the richest private institutions in the land and as such was likely to come under very close scrutiny from a Labour Government so they must be seen to be beyond criticism in the way they handled their finances and management.

He tried to bring in an experiment to test the efficacy of IQ tests but the Fellows rejected this. He did however sit in on a number of scholarship interviews. He asked a history candidate who had been studying the latter half of the 17th Century to name a scientist from this period. The student couldn't. So he asked him to name any scientist, the student suggested 'Isaac Newton'. Tizard suggest that he might have come from the late 17th Century. The student replied that that would only be of interest to a scientist. On a clear and frosty winter's evening, a student had been put through his paces when at the end, Tizard asked him to name the nearest and brightest star. No answer. 'Weren't the stars shining when you came in?' He didn't know. 'Don't you ever look up at the sky and wonder what it is all about? Well, if you don't, you may well know all about the quantum theory but you'll never make a scientist.'

The President of Magdalen was expected to be a wealthy person – Tizard was not. He was unable to afford to furnish most of the rooms. There was also the problem of feeding his constant stream of guests on his, his wife's and his one servant's ration cards. In one week, Lady Tizard worked out that they had provided 70 'additional meals'.

Meanwhile, the war continued and with it so did Tizard's involvement. In December 1942, Sir Stafford Cripps, who had succeeded Llewellin as Minister of Aircraft Production and Chairman of the Radio Board, asked Tizard to advise him on priorities. Tizard's reply was that it very much depends on how much longer the war was expected to last. He pointed out that there were many ideas in the pipeline but of these few would be operational before 1945. He also pointed out, 'Every successful 'research' has to be followed by intensive technical development, then by production, and then by training in the use of the new equipment.' He advised that with limited resources, these should be directed to those projects which had the best chance of succeeding and of having a significant impact on the outcome.

He suggested that bombing should be mainly by day and that only the more experienced pilots should take part in night raids as they were the only ones who could make the best use of the highly sophisticated aids available to help the night bombers and without this, there was little chance of them getting through.

It is interesting to note that Tizard was a strong proponent of the 'Dam Busters' raid (Operation Chastise – to give it its official code name) whereas, Cherwell opposed the idea. Tizard had seen the importance of attacking power supplies as early as 1940 when Barnes Wallis first tabled the idea. In fact he had strongly supported his efforts through all the setbacks to the point that Wallis conceded that the raid would never have happened with Tizard's support. Anyone who has seen the film will be aware of the effort that Wallis put into developing the weapon ('bouncing bomb'). What was no so evident from that film was how much influence came from Tizard. He had arranged for Wallis to have access to the facilities at the NPL and then to produce the design drawings required to modify a Stirling or Lancaster to carry the bomb. But meanwhile things had been held up. On the one hand M.A.P. had been encouraging the Wallis experiments whilst on the other Cherwell had informed that that the dams were no longer considered important targets but the Air Staff disagreed and informed Wallis that they wanted everything ready within 3 months.

Wallis received this notice on 26th February; the raid took place on 16/17th May. At this time, he neither had a bomb that worked nor an aircraft that could carry it although he had managed to demonstrate the principle to Tizard using a 2 inch (5 cm) sphere. After the successful raid, Tizard wrote to Wallis saying that he had 'no hesitation in saying that yours is the finest individual technical achievement of the war'.

At the same time as all this was happening, Tizard was arranging a Mission to the USSR along similar lines to his 1940 Mission to the USA. This, however, ran into problems first with the USA who claimed to know nothing about it – apparently a letter had been mislaid. Then the Russians, themselves, became less than enthusiastic. Finally, the Mission could not get transport and by July it was clear there would little to be gained so the whole thing was cancelled. How things would have turned out, had he gone with Blackett and Cockcroft among other senior officers, we shall never know.

Clark, Ronald W., (1965), *Tizard*, Methuen & Co Ltd

WARWICK BUSINESS SCHOOL 'FAILURE THERAPY'

NIGEL CUMMINGS

Entrepreneurs who saw their businesses fail in 2012 might yet see 2013 as a 'happy new year' thanks to some 'failure therapy' from Warwick Business School!

According to the Insolvency Service there were 3,971 compulsory liquidations and creditors' voluntary business liquidations in England and Wales in the third quarter of 2012. But the end of a business does not have to be the end of an entrepreneur according to Professors Deniz Ucbasaran, Andy Lockett and John Lyon at Warwick Business School and Dean Shepherd of Indiana University.

The team have pooled together more than 40 papers of research on the effects of business failure and believe their experience can offer entrepreneurs 'failure therapy' to start again in 2013. In their paper 'Life After Business Failure: The Process and Consequences of Business Failure for Entrepreneurs' they reveal how entrepreneurs can recover from the trauma of losing a business and with the country desperate to pull itself out of the on-going economic crisis how the UK's innovators and business drivers react to failure will be crucial.

'Where there is uncertainty, there is bound to be failure,' said Professor Ucbasaran, Professor of Entrepreneurship at Warwick Business School. 'It is not surprising therefore, that many new ventures fail. The aftermath of failure is often fraught with psychological, social and financial turmoil.

'But it doesn't have to be the end. Successful entrepreneurs pick themselves up after failures, and even capitalise on them. They see failure as an opportunity for learning. Take the example of businessman Steve Mariotti who was mugged in New York by three youths. It was not a nice experience, but he started thinking why were they out at night? He used the experience to set up the Network For Teaching Entrepreneurship. He capitalised on a negative experience to come up with an opportunity.'

According to Professor Lockett, who is Professor of Strategy and Entrepreneurship at WBS, 'There can be a stigma to an entrepreneur involved in a failing business. Research shows that accepting at least partial responsibility may allow them to garner sympathy and signal they have learned from their mistakes. Importantly we found that some investors treat failure with a degree of tolerance, acceptance and open-mindedness. As long as the entrepreneurs can address their failure by diagnosing what went wrong and deal with the fall out in an honourable and professional manner'.

Losing a business can have a big psychological impact on the entrepreneur, and Professor Ucbasaran believes research has shown the best way to deal with such grief. 'Losing a business has parallels with the loss of someone important,' said Professor Ucbasaran, 'The entrepreneur can feel grief and a host of negative emotions, but those displaying 'learned optimism' are more likely to make sense of failure that aids recovery and propels them to undertake future entrepreneurial activity. There are also grief recovery strategies that entrepreneurs can use to quickly recover from failure and learn from it.' The professor also says successful entrepreneurs are constantly learning and adapting from failures.

Professor Ucbasaran believes it is vital entrepreneurs are encouraged to bounce back as the UK looks to drag itself out of its economic crisis in 2013. 'Entrepreneurs are the seed. They question norms and come up with new solutions, which, usually big business then goes on to execute more effectively. We need them for vitality and dynamism in the economy. They are willing to go with a hunch and take action. It is a way of thinking, a mind-set and we need more of them.'

'Good judgment comes from experience. Unfortunately, the experience usually comes from bad judgment.' (Ed)

TEN YEARS OF *KMRP*

JOHN EDWARDS

Come and celebrate at KIM2013, 4-5 June 2013

Join us at KIM2013 in Warwickshire next June and help us to celebrate ten years of our Knowledge Management Journal, *Knowledge Management Research & Practice* (*KMRP*). KIM2013 is the spiritual successor to the KMAC conferences that started in 2000 which, together with *KMRP*, demonstrates the OR Society's continuing commitment to helping improve knowledge management.

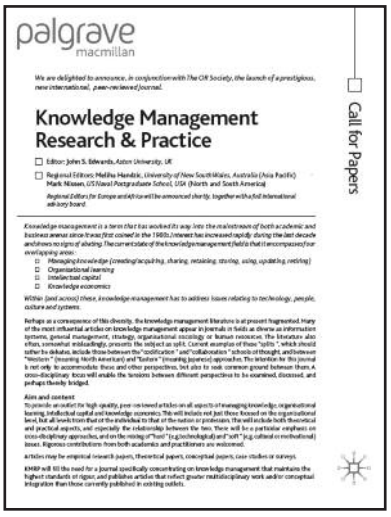
One element of the KIM2013 conference in June will be a celebration of the tenth anniversary of *KMRP* which will complete its tenth volume with the publication of the December 2012 issue. *KMRP* is the first knowledge management (KM) journal to gain an impact factor and has established its reputation as one of the world's top KM journals.

The genesis of the journal came in the interest of a group of people in the relationship between O.R. and KM. The feeling was that O.R. could make two types of contribution. One was specifically O.R. type work in knowledge management, which we might broadly sum up as being model-based analysis. The other was that KM clearly overlapped several disciplinary areas, some of which were already fighting a turf war for the 'territory' of KM, and O.R.'s interdisciplinary approach had much to offer in unifying and integrating the different perspectives. This chimed in very closely with the growth of work in mixed methods in O.R. at the turn of the century (gosh, that sounds such a long time ago...).

KMRP launch flyer

However, the real story goes much further back than the first issue of *KMRP* in July 2003, even allowing for the lead time to obtain papers and reviewers, get the reviews done and publish a journal issue.

In my own case, in the early 1990s, I was working on expert systems and knowledge-based systems. My first exposure to KM - at least by that name - was in 1994, when I contributed a position paper to a workshop on KM at an expert systems conference and joined the group that formed from it. The prime movers were Rob van der Spek and Robert de Hoog, and another notable member was Karl Wiig, the man who gave knowledge management its name.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Knowledge Management Research & Practice

Call for Papers

Issue 1 Call for papers

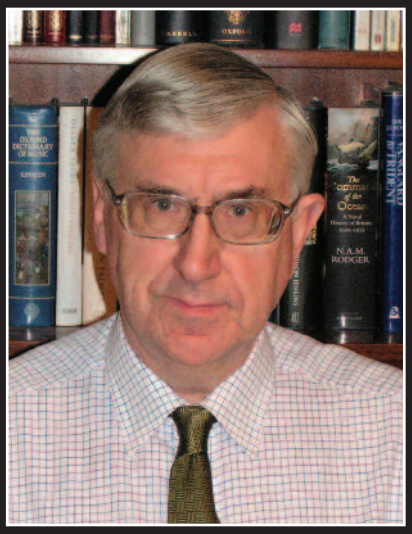
The next few years saw the beginnings of specifically 'O.R.' and indeed OR Society activity in knowledge management. The first of the KMAC (Knowledge Management Aston Conference) series of conferences at Aston took place in 2000, and later that year there was no less than a triple stream on knowledge management at the OR42 annual conference in Swansea. Special issues of EJIS and JORS followed, and the OR Society and Palgrave Macmillan had by then had the foresight to set up a journal specialising in knowledge management - *KMRP* was born! The rest, as they say, is history. Many people helped to achieve that, but listing all of them would probably fill up this whole edition: they know who they are, and my personal thanks to every one of them.

So, why not come along to KIM2013 and be part of the *KMRP* tenth anniversary celebrations, too? The KM conference still focusses on model-based analysis and integrating perspectives and we will most definitely be looking forward as well as back.

For more information about presenting at and booking for KIM2013 go to http://www.theorsociety.com/KIM2013

RETURN TO THE FOLD

ROGER FORDER



‘A healthy and well managed financial environment is an important enabler, but the key measure of our success is how far we continue to meet our objectives of advancing knowledge, interest and education in operational research.’

When Sherlock Holmes returned to Baker Street three years after his faked death at the Reichenbach Falls he was, within hours, the subject of an assassination attempt.

I hope that my return to the Board, after only two years, does not prompt a similar reaction. At least I didn’t have to fake my own death in order to step down as Vice President in 2010.

It took only a little arm-twisting from Past President Richard Eglese to encourage me to stand as Treasurer, since I have always had a tidy-minded fascination with that side of organizational life (I used to keep my own full double-entry accounts when I was a teenager, although perhaps I should not admit that).

Taking on the Treasurer’s role in January means that one of the first milestones is wrapping up the previous year’s accounts. As far as the bottom line is concerned, we just about broke even in 2012 (with a little help from realised capital gains on our investments). This is the way it should be for a charity, unless we have an explicit and well-founded reason to be building up our reserves or dipping into them. A healthy and well managed financial environment is an important enabler, but the key measure of our success is how far we continue to meet our objectives of advancing knowledge, interest and education in operational research. Over the last year, my Board colleagues have written a good deal about the Society’s activities, initiatives and aspirations, and readers of *Inside O.R.* should be well aware that there are plenty of good things going on and exciting new ideas in the pipeline. But, financially, is it once again just a matter of ‘steady as she goes’ over the coming year? Well, not quite.

In my previous stint on the Board, I was a member of the Publicity, Membership and Website Committee. Since taking over as Treasurer, I’ve become a member of two of the committees whose work I previously took very much for granted - Investments (where I am the chair) and Publications. At first sight, one might think that all these topics are relatively unconnected, but that’s not the case. There is a nexus of key issues that links together membership, publications and investments (or, at least, the reserves that they represent). A buoyant membership base is undeniably the bedrock on which a learned and professional Society like ours must be built. Ruth Kaufman’s leader in the February issue eloquently set out the benefits of Society membership that we shall be stressing in our 2013 membership drive. The aim, of course, is to reverse the slow but distinct downward drift in membership that has been apparent over the last few years.

Nevertheless, whilst being very aware of the need to reverse this trend, we have not - in recent years - had to worry too much about the purely financial implications of membership numbers. This may

be surprising to those not familiar with the Society's finances, but, as most members know, our largest income stream is not from subscriptions but from our publications, and this has remained very buoyant. However, as Jeff Griffiths explained in his October 2012 leader, there are now clouds on the horizon (well, actually, quite a long way this side of the horizon) in the form of moves by research funding agencies to mandate Open Access publication. It is still very unclear how the chips will eventually fall here - there is a lot of emergent behaviour from authors, universities, funding bodies and publishers (and, indeed, learned societies) waiting to manifest itself over the next few years - but my guess is that there will eventually be less money in the system to come our way. This is not to suggest that our income stream from publications will wither away to negligible proportions: the proven ability and experience of learned societies in orchestrating impartial peer review do undoubtedly have a market value, even if the mechanisms by which that value is turned into hard cash will change. Nevertheless, we may well eventually find ourselves in a position where improving membership numbers has a financial as well as a more general imperative.

Giving us time to manage change is, of course, one of the functions of the financial reserves provided by our investments. As Jeff Griffiths mentioned, these have been increased over the last few years through the creation of a Journal Risks Special Reserve Fund, in response to the risks posed by moves towards Open Access. This was a very necessary and far-sighted move by the Board. But, how much is enough? Should we continue to add to this reserve while publications income remains buoyant, or decide that we have now made reasonable and judicious provision?

As well as giving us time to respond to secular changes in the external environment, reserves should also enable us to weather any short-term turbulence that might come our way. Who knows how this might arise? A few years ago, the village hall that I help to run had to cease hiring out its facilities for several weeks while a comprehensive operation to remove asbestos was undertaken. With no hire fees coming in but the cost of the work and overheads still having to be paid, reserves provided a lifeline. Now, I am not for one moment suggesting that the Society's offices have an asbestos problem, but I am sure that you get the point.

So, setting the right level for our reserves presents an interesting problem in its own right, whether we are trying to give ourselves more room to manoeuvre in the face of inexorably moving goalposts or increasing our robustness to unwelcome events of a more transient nature. It is a problem that we probably need to address in a more thoroughgoing manner, perhaps with some more explicit scenario analysis. Having spent my O.R. career in the defence environment, this would seem like a fascinating return to my roots.

What, of course, reserves cannot do is to insulate us from the effects of change over the long term. For that, we have to get our fundamentals right and make sure that they stay right as the world changes. But then no one said that running organizations was easy - if it were, then it would not be fun and no one would need O.R!

<OR>

NEWS OF MEMBERS

NEW MEMBERS (APRIL 2013)

The Society welcomes the following new members,
DONALD CUMMING, Glasgow; SHUBHAMOY DEY, India; HALLVAR GISNAS, Norway; PETTER KOBER, Norway; JASON LOWTHER, Birmingham; MAHMOUD OSMAN, Essex; JEAN MCLAREN, Gloucestershire; ABDEL SALHI, Essex; WILLIAM USHER, London; DAVID WILLIAMS, Glamorgan;

and Reinstated members,
BEN COLLIER, Hertfordshire; MATTHEW KNOTT, Hants; SUSAN WATTS, Surrey;

and the following student members,
YALIN BI, Southampton; ANGELA DE MORAES, Edinburgh; DEITER FRUEAUFF, Germany; ANDRES RODRIGUEZ, Colombia; ESCALLON, SADIA FAROOQ, Coventry; JAMES P HEPPELL, Hants; SHAMAILA ISHAQ, Coventry; KAAREL KALM, London; JOSEPH KIRRANE, Manchester; GAVIN LE ROUX, South Africa; EMILIO LOPEZ CANO, Spain; MIKE McGUIGAN, Glasgow; PAULA MORGENSTERN, London; ALZBETA REHAKOVA, West Lothian; MARINA TVOROGOVA, Germany; VIOREL CATALIN VASILE, Edinburgh;

Total Membership
2337

<OR>

CANDORS ACCREDITATION

LOUISE ORPIN, EDUCATION OFFICER

Are you starting out in a career in O.R? Candidate Associate of The OR Society (CandORS) accreditation has been designed for you.

CandORS is the first stage of the Society's professional accreditation scheme. Members are entitled to use the letters CandORS after their name to signal they have a strong analytical and problem solving background. They also benefit from the allocation of a mentor who is able to offer advice on professional development. Several CandORS members tell us why they are accredited and how it has helped them.

Penny Holborn, Cardiff University

As an undergraduate student at Cardiff University, who expressed an interest for a career in O.R., I was encouraged to join The OR Society as a student member. I first thought, if nothing else, that it would be something good to add to my CV. However, I was pleasantly surprised to find it provided me with a lot more. It introduced me to the O.R. community for the first time and to a wealth of resources I had previously not been aware of. Having spent the last few years completing my PhD here in Cardiff I have actively engaged with both the Society and the wider O.R. community at annual conferences, regional meetings and events. I now feel a part of that community.

After listening to the opening talk at last year's Student Conference on Operational Research (SCOR2012) from Gavin Blackett I found myself thinking that the time for applying for jobs was drawing nearer. How could I get the attention of future employers and advertise the skills I had to offer? O.R. is still a profession that is not widely acknowledged, it is still common for people to ask, 'What is O.R?'

The talk was entitled, 'The OR Society: YOUR Professional Body' and it once again highlighted to me the benefits of belonging to the Society and both what it can do for me and what I can do for it. Having listened to a presentation previously about the accreditation schemes, I wondered why I had not got around to completing the process for Candidate Associate. I'd already completed an undergraduate degree with a substantial O.R. content and so had met the required standards.

So after returning from the conference I completed the process and encouraged others around me to do the same. The process really was very easy, all I had to do was to complete a simple form and have this verified by a senior member of The OR Society. The process was free and on completing the application I was appointed a mentor, another great benefit. Their role is to help guide me through the first couple of years in my O.R. career, and then to set me on my way to the higher accreditation grades.

The accreditation means I am entitled to use the initials CandORS after my name, which will hopefully signal to potential employers that I have a strong analytic and problem solving background. It will also indicate my commitment to professional development and to actively engaging within the Society.

A minimum of two years must lapse between entering a grade and applying to transfer to another grade so I would encourage members, especially those student members, to apply for CandORS accreditation now and not wait. You can then start climbing up the ladder and get your skills recognised.

Alex Sheen, Dstl

I joined Dstl, the Ministry of Defence's research establishment, straight out of university having studied physics. With no prior experience or knowledge of O.R., joining The OR Society provided some legitimacy to my job title of Operational Analyst! The OR Society was a great source of information and explanation of this new world I had entered into.

Having found my feet, I knew I would need to develop my skills and seek broad experiences to further my career. Age old wisdom says that our objectives must be measurable and the Society's accreditation process provides a readymade framework to map out professional development through my career. I was keen to get started as soon as possible so once I had the minimum amount of experience and the agreement of my mentor I applied for CandORS status. Getting on the first rung of the ladder provided a real encouragement to seek Associate status which I have recently applied for.

I am fortunate that my organisation encourages continuous professional development including attending conferences and training courses, but gaining CandORS has provided a real drive to seek the skills and experience I need to attain AORS.

Julie Vile, Cardiff University

Working as a 'Mathematician' within the NHS, I'm often initially approached with caution by fellow employees – having a professional membership and accreditation has helped me to demonstrate to colleagues that O.R. is a recognisable profession and that I have a rounded set of skills beyond the standard academic qualifications acquired by most postgraduates.

Becoming more confident as a researcher in the final years of my PhD, specifically within the application of O.R. to healthcare, I was encouraged by my academic supervisor to apply for accreditation. The process to enter the CandORS grade was impressively straightforward for me as the Society recognised the substantial content of challenging O.R. material within my PhD. The grade is also free for Society members – so suitable for all postgraduate students or those in the early stages of their career in a post with a significant O.R. content.

Having recently gained Doctoral status, I have obtained a joint research post in collaboration with Cardiff School of Mathematics and Aneurin Bevan Health Board. Within the Health Board, I am actively developing a new Mathematical Modelling Unit to explore the potential system impacts of different interventions to ensure optimum benefits realisation, whilst furthering my research interests in stochastic modelling at Cardiff University.

In the NHS, O.R. is still a profession that is not widely acknowledged, and so more than ever, I feel it is important to have a professional label that identifies O.R. as a profession in its own right, and the commitment of the individual on the accreditation scheme to professional development. On a personal level, it helps me to identify to clients that I have a strong analytic and problem solving background. I hope that through my undertaking of several projects that will successfully demonstrate the benefit of advanced analytical methods to aid planners make better decisions, colleagues will soon begin to think differently about future challenges, and consider the use of O.R. as a standard discipline to provide solutions where ready-made software fails.

Being an accredited member of The OR Society not only carries weight that enables me to stand out in my career, but also defines a clear pathway for my future progression. As I further my development and engage with the wider O.R. community, it's satisfying to know that I am being supported to progress to the next stage of professional accreditation, and will gain recognition for my achievements.

John-Patrick Richardson, National Nuclear Laboratory

I've been an O.R. Analyst with the National Nuclear Laboratory (NNL) for just over 3 years, after studying a BSc (Hons) in O.R. and MSc in Management, both at Lancaster University. NNL are a nuclear technology services provider, specialising in providing customers with tailored solutions in a number of key areas including Fuel Cycle Solutions; Waste Management & Decommissioning; and Reactor Operations Support.

I first became aware of CandORS accreditation through some of my colleagues who are also active members of the Society. Given that NNL are foremost a knowledge-based organisation, there is an established culture of achieving chartership or accreditation in the various teams and capabilities we have here, and so it is a perfect fit for our O.R. team to seek accreditation with The OR Society. NNL are a project-based organisation with turnover sourced by projects won by competitive tender, and as such, it is important for prospective customers to see that we meet a certain standard in our skill set that The OR Society accreditation can provide.

Personally with the CandORS level accreditation, demonstrating that I met the standard of having completed a degree with a substantial O.R. content provides customers with confidence that I am highly competent and able to undertake the work they require. Alongside this, it also demonstrates that I have the motivation to take the first step of the ladder of accreditation, towards constantly developing and refreshing my skill set and competencies throughout the rest of my career to achieving Fellow status (I achieved AORS status earlier this year). For anyone reading this and considering CandORS accreditation, I strongly recommend that you take that first step.

Visit www.TheORSociety.com/CandORS for more information and an application form.

IMSIO 5 2013 INTELLIGENT MANAGEMENT SYSTEMS IN OPERATIONS

3-4 JULY 2013, UNIVERSITY OF SALFORD.

KHAIRY KOBBACY AND SUNIL VADERA

This will be the fifth in a series of conferences that aims to bring together researchers developing and applying techniques from AI and O.R. to problems in operations management.

This conference, to be held in the Think Lab at Salford University, aims to bring together researchers and practitioners working on the challenging problems in operations management that are at the O.R.-AI interface.

Outline of Conference Programme

Plenary talk Professor Qiang Shen

Review paper on AI applications in Operations: 2009-2013; Kobbacy and Vadera

Sessions on:

- Production / Manufacturing
- Methodologies
- Healthcare
- Maintenance
- Data Mining
- Supply Chains

Key Dates

*Full papers to be submitted by **01 April 2013**

*Deadline for booking and payment for your paper to be included in the Proceedings **29 May 2013**.

Book Online

Please go to www.theorsociety.com/IMSIO2013 to book and pay for the conference and to reserve your place at our Conference Dinner at The Copthorne Hotel, Manchester on Wed 3 July 2013. Delegates will need to make their own arrangements for accommodation, please see our website above.

PLENARY SPEAKER:

Professor Qiang Shen is the Director of the Institute of Mathematics, Physics and Computer Science at Aberystwyth University. He is a Fellow of the Learned Society of Wales and member of the UK Research Exercise Framework (REF) 2014 panel on Computer Science and Informatics.

The title of Professor Shen's presentation will be - 'Feature Selection in Intelligent Information Systems'

Organising committee

Khairy A. H. Kobbacy, University of Salford (Chair)
Sunil Vadera, University of Salford (Co-Chair)
Hilary Wilkes, Conference Organiser, the OR Society

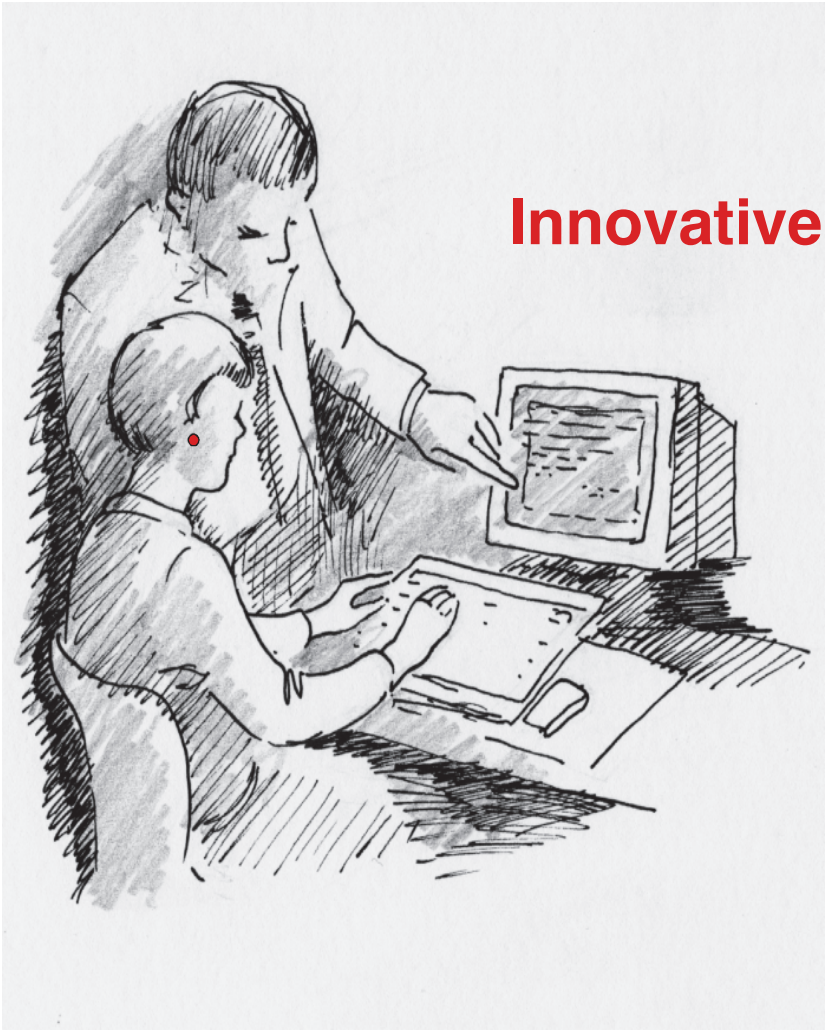
www.theorsociety.com/IMSIO2013

Email: k.a.h.kobbacy@salford.ac.uk; s.vadera@salford.ac.uk

<OR>

MAKE SURE YOUR CONTACT DETAILS ARE UP-TO-DATE

Contact Carol Smith
carol.smith@theorsociety.com
or go online to www.theorsociety.com
log on and click 'My Contact Details'



Creative thinker?

Innovative individual?

Problem solver?

Equip yourself with the tools and techniques to develop and implement winning strategies.

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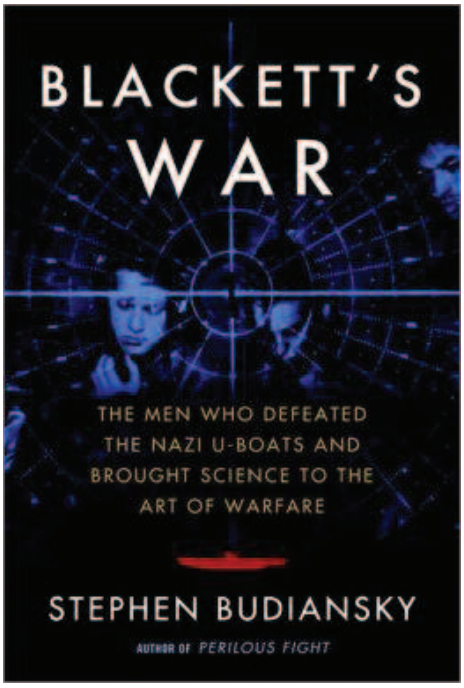
HOW PATRICK BLACKETT SMASHED THE U-BOAT MENACE

NIGEL CUMMINGS

The Wall Street Journal, 15 February edition, carried an article by Marc Levinson about a new book written about our very own Patrick Blackett and his work during World War II.



It was unusual to see a review about the 'Father of O.R.' appearing in an American journal before we had a chance to look at it, but that is the way it goes sometimes.

The book has been written by Stephen Budiansky an American author who writes primarily about history and science. He is a former national security correspondent, foreign editor, and deputy editor of U.S. News & World Report. His approach to Blackett's work during World War II focuses on how the outcome of the war hung on the work of physicists, biologists and mathematicians who applied scientific thinking to battlefield problems.

It tells of how, whilst at a tennis tournament, he made the acquaintance of the Oxford University physicist F.A. Lindemann, who had performed experiments aboard aircraft during the war. He lectured Churchill on ways science might help protect Britain against aerial bombardment. Lindemann impressed Churchill sufficiently, insomuch that shortly after the meeting between them. Churchill exerted as much influence as he could on the British government to bring in scientific advisers on military affairs.

Churchill as we know from the historical record was a forceful man and rarely suffered defeat in discussion or argument, so it is not surprising that by 1934, the chemist Henry Tizard, biologist A.V. Hill and physicist Patrick Blackett entered the British defence establishment.

Hundreds more scientists were to follow them and Budiansky's book details the exciting story of this elite group of British and American scientists who, during World War II, developed the new field of O.R. and used their collective expertise to reverse the fortunes of the German war machine.

The allies suffered heavily as a result of the U-boat onslaughts during the first years of the war, but by 1941, the application of science began to affect the effectiveness of the German campaign of destruction. Patrick Blackett and his team of scientists contributed greatly to the war effort by influencing the military to make decisions based on data rather than prejudice.

This adoption of science and mathematical analysis proved to be particularly useful in the North Atlantic, where U-boats prior to the application of O.R. had wreaked devastation on merchant shipping. Blackett using little more than simple mathematics, probability theory and psychology significantly increased the chances of a 'kill'.

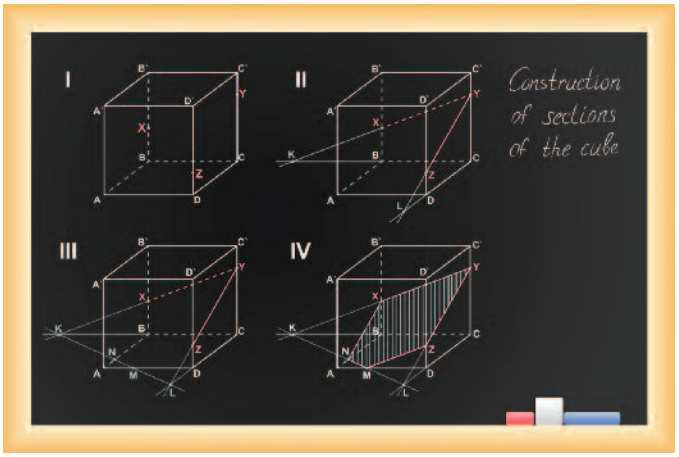
According to Marc Levinson's report in the Wall Street Journal, Stephen Budiansky's new book is an exciting story about those civilian intellectuals who helped to change the nature of twentieth-century warfare. Throughout, Budiansky describes how scientists became intimately involved with what had once been the distinct province of military commanders—convincing the disbelieving military to place trust in solutions provided by Operational Research. It emphasises how Blackett and those other scientists who worked with him during the war, retained the belief that operational analysis, and a scientific mentality, could change the world. We are here today because of their efforts.

Blackett's War: The Men Who Defeated the Nazi U-Boats and Brought Science to the Art of Warfare by Stephen Budiansky (published 19 Feb 2013); priced at £18.32 in hard cover version from Amazon UK (Some online book dealers operating via Amazon have the book already discounted down to £10.17 + P&P). This is a Hardcover publication of 306 pages; it is published by the Knopf Publishing Group. Its ISBN no is -10: 030759596X

OPERATIONAL RESEARCH IN SCHOOLS: STIMULATING SIMULATION

NOEL-ANN BRADSHAW

As a member of the Operational Research in Schools (ORiS) task-force I decided that it was about time I actively communicated something of my passion for O.R. in a school environment.



An invitation from Sherborne to take a couple of classes to show pupils the benefits of continuing mathematics after A-level gave me the opportunity I was seeking.

Sherborne is a beautifully-situated public school for boys in north Dorset. Its maths department takes a particular pride in having educated Alan Turing. Like many schools it has a large number of sixth-formers who take mathematics at A-level but relatively few apply to study the subject at university.

I asked three exceptionally able second-year students at Greenwich, Chelsea Dole, Dan Dixey and Panisha Pindoria to accompany me. They had recently completed a module on Operational Research and were keen to try out some of their new-learned skills on real-world problems that would be of interest to the pupils.

I had been asked to start with an initial session on the benefits of studying maths at university, into which I put some interesting maths that the audience would not yet have come across. This grabbed the boys' attention, especially when I demonstrated how to make two linked hearts from a couple of Mobius bands!

The next session was based on simulating the spread of disease including a dice-throwing simulation game developed by Paul Harper (Cardiff). This worked extremely well. I had left the planning to my students and they did not let me down. The session was fun and the boys particularly enjoyed the challenge of infecting their classmates. Finally when all the boys were either infected or recovered, we explained the underlying maths. One lesson I learned from this is that if you give out dice to a class of 25 pupils be sure you get them back before you try talking to them! However despite the distraction of the constant rolling of dice, the mathematical principles were successfully communicated to the pupils.

We ended with a session on linear programming, as an example of the value of maths in the workplace. This was particularly apt as many of the pupils were hoping to go into some form of business or management, and yet they had no idea of the part that mathematics plays in making business decisions. I ended by explaining that this was all part of an area of maths called operational research, and showed how the methods of this area of mathematics can help to optimise business operations and improve profits.

The boys seemed genuinely interested and asked more questions than I had expected. The teachers were also particularly interested in the Operational Research angle.

Dr Neil Bradshaw, Head of Maths at Sherborne (no relation) told me subsequently that, as a result of the event, they have now changed their curriculum and that 'decision maths grabs the students attention more easily than 2000-year-old geometry and the feedback I have so far is that the students find it stimulating and interesting.' The O.R. part of me is delighted that we had such an impact on the school, but as a Council member for the British Society for the History of Maths I have to say I felt a slight pang of regret over the displacement of Euclid!

THE MATHEMATICS OF PLANTS AND ANTS AND OTHER LIVING THINGS

NIGEL CUMMINGS

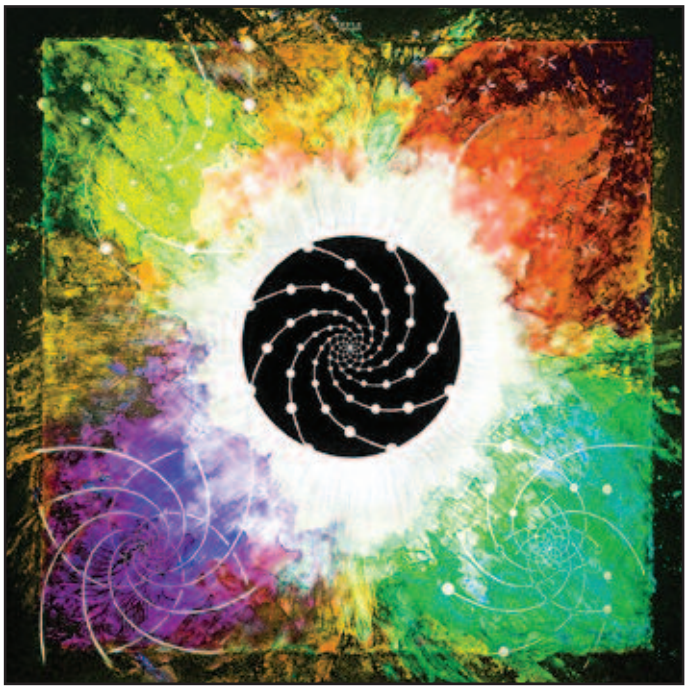
Is God a mathematician? The apparent mathematical nature of Nature, from forces to flowers, has left many since the time of the Greeks wondering. Does the universe we inhabit, have an underlying mathematical structure? This is the first in a series of occasional articles that may serve to highlight how mathematics and nature are inextricably linked.

Edward Osborne

Edward Osborne 'E. O.' Wilson, an American sociobiologist, once said 'Math phobes are wrong! Mathematics is just a language, and language is only a habit of thought.' He also, after a systematic study conducted on ants and their behaviour, said that, 'Karl Marx was right, socialism works, it is just that he had the wrong species'.

Wilson's research on ants, along with Albert Hölldobler's work culminated in an encyclopaedic work, *The Ants* (1990). Their book revealed that much of the self-sacrificing and rigidly predictable behaviour on the part of individual ants could be explained on the basis of their genetic interests in the survival of the sisters. Wilson was led to argue for a sociobiological explanation for all social behaviour on the model of the behaviour of the social insects.

Wilson's comment about Karl Mark and socialism referred to ants from the point of view that while ants and other eusocial species appear to live in communist-like societies, they only do so because they are forced to from their basic biology, as they lack reproductive independence: worker ants, being sterile, need their ant-queen to survive as a colony and a species. Individual ants cannot reproduce without a queen, thus being forced to live in centralised societies. Humans, however, do possess reproductive independence; they did, at least until recently; merely require a partner of the opposite sex.

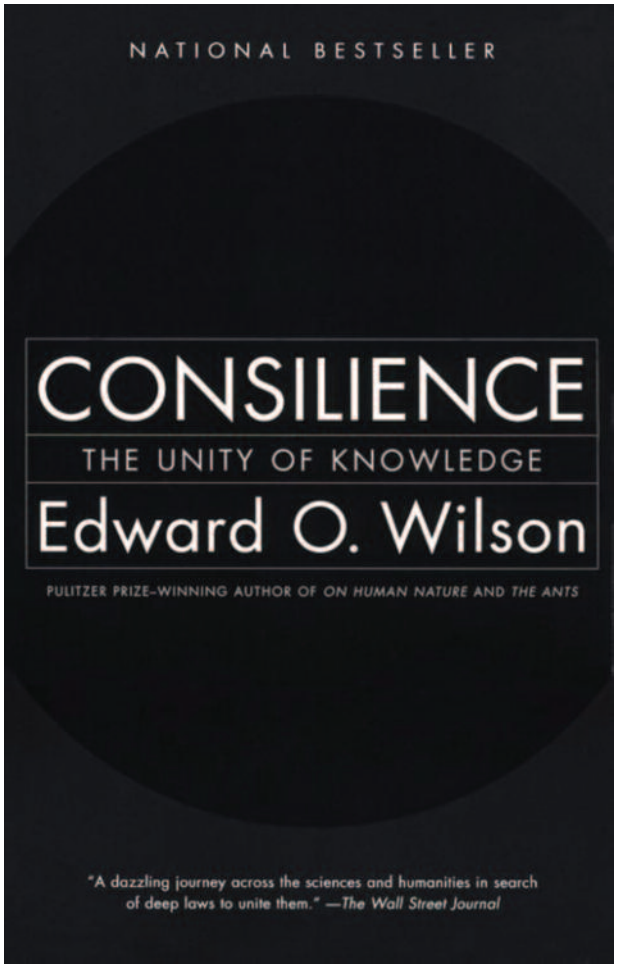


Patterns of Consilience

On the matter of maths and the sciences, his 1998 book *Consilience: The Unity of Knowledge*, Wilson discussed methods that have been used to unite the sciences, and might be able to unite the sciences with the humanities. He used the term 'consilience' to describe the synthesis of knowledge from different specialised fields of human endeavour.

In *Consilience*, he defined human nature as a collection of epigenetic rules, the genetic patterns of mental development. He argued that culture and rituals were products, not parts, of human nature. He also said that art was not part of human nature, but our appreciation of art was, and he argued that concepts such as art appreciation, and, for example, fear of snakes, could be studied by scientific methods of the natural sciences.

This notion is probably easier to understand when one considers how even nature itself seems to be governed by science, well at least mathematics!



Take a look at a deciduous tree in winter. If you lie down at its base and look up, you will notice that the angulation of the branches is remarkably regular. Tree species such as Norfolk Island pine, are quite circular in their construction; yet maples, are more like gentle spirals. These shapes in nature follow a mathematical code that results in an arc-shaped canopy. Other plant parts exhibit a similar pattern of spiral phyllotaxis: pine cones, sunflower heads, arrangement of leaves on stems, even the development of buds on your garden bushes in spring.

The angle between successive elements of most plant spirals is equal to the Golden Angle (approximately 137.51 degrees). Botanists originally thought that plant growth shapes were determined by sunlight, and that leaf and branch angulation was nature's way of maximising sunlight to all parts of one plant. But recently, scientists have discovered that this spiral phyllotaxis is also a by-product of the biochemistry of plant growth.

As leaves or branches grow spirally along a main axis, their placement forms an interlocking spiral of clockwise and anticlockwise arms. The numbers of arms in each direction are invariably Fibonacci numbers that are more often than not consecutive numbers in that sequence. Scientists now recognize that these are inextricably linked to the biochemistry of plant growth.

Fibonacci or to give him his proper name, Leonardo of Pisa, or Leonardo Pisano was born in Pisa, Italy around 1175. In the year 1202 Fibonacci investigated how ideal rabbits would breed under ideal conditions. This led him to the sequence to which his name has been given. In the same year he published his book *Liber Abbaci* (from which his pseudonym was derived). In this he used the Hindu-Arabic number system, with which we are now all so familiar, and described the basic rules of arithmetic.

The Fibonacci sequence is defined recursively: $F_n = F_{n-1}+F_{n-2}$. However, the n^{th} term can be found by using the formula $F_n = \frac{\sqrt{5}}{5}(\frac{1+\sqrt{5}}{2})^n$ and rounding to the nearest integer.

The ratio $F_n/F_{n-1} \rightarrow \phi = (\sqrt{5} + 1)/2 = 1.618034$ is the Golden Ratio.

The Golden Ratio can also be obtained by taking a rectangle of sides a+b and a and dividing it into a square (of side a) and a rectangle with sides a and b such that the ratio of the sides of the larger rectangle is the same as the ratio of the sides of the smaller one i.e. $\frac{a+b}{a} = \frac{a}{b}$

If we let b = 1 then $a = (1 \pm \sqrt{5})/2 = 1.618034 = a/b = (a+b)/a = \phi$.

The Golden Angle is obtained by dividing a circle into 2 sectors such that if a is the length of the larger and b the length of the smaller then $\frac{a+b}{a} = \frac{a}{b}$

The angle subtended by the smaller arc is therefore $360(1-1/\phi)=137.508°$ (3dp)

We owe Fibonacci so much! **<OR>**

Leonardo of Pisa

NOMINATIONS FOR BEALE MEDAL AND COMPANIONSHIP OF O.R.

GAVIN BLACKETT, SECRETARY & GENERAL MANAGER

The President Elect's committee under the stewardship of Stewart Robinson is responsible for stimulating and reviewing nominations for these two prestigious awards. This is your opportunity for an input into the process.

BEALE MEDAL

This award is named in memory of E M L Beale. It is designed to give formal recognition to a sustained contribution by one person to Operational Research in the United Kingdom.

Eligibility

All persons other than members of the Awards Panel who, at the time of application, have at least ten years' working experience, based in the United Kingdom, of Operational Research in industry, commerce, government, or in a University teaching or research post, are eligible for consideration. Existing holders of the Beale Medal may be considered, provided that the contribution forming the subject of the entry is in a different area or is substantially differentiated from the basis of the previous award in some other manner.

Entry

Candidates may nominate themselves, be nominated by a member of the Operational Research Society, or be nominated by the President Elect's / Past President's Committee. In respect of each nominee the required submission is a statement describing the sustained contribution made by the candidate to Operational Research, which must have extended over a period of at least five years. The contribution may be to the philosophy, theory or practice of Operational Research, or to some combination of those areas. The contribution must be such as to have advanced significantly the knowledge, understanding or practice of the subject. The statement must be endorsed by at least six independent sponsors, who shall be members of the Operational Research Society and shall have appended their names and signatures to it.

Selection

In any year, the award will be made to the individual who, in the opinion of the Awards Panel, has made the most outstanding sustained contribution to Operational Research. The Awards Panel may, if necessary, take advice from outside specialists in the field, who are independent of the candidate. The decision remains the responsibility of the committee alone. The Committee may decline to make an award if it considers that none of the entries is of sufficient merit.

COMPANIONSHIP OF O.R.

The Companionship of Operational Research should be awarded for sustained support and encouragement for the development of operational research or for those in influential positions who are in broad sympathy with the subject area. Such contributions might be through public or private activities.

Eligibility

Companions are normally expected to fall within one of the following categories:

a) Senior managers in the private sector or public sector (including government) who have a record of long term encouragement of O.R. within their own organisations. This category includes senior figures in consultancy firms with a strong O.R. component. A positive factor is evidence of personal involvement in OR Society events.
b) Senior non-O.R. academics who have a record of long-term encouragement for operational research within their own institutions. These should normally be at or near Vice-Chancellorial level.
c) Eminent persons in related disciplines. (Statistics, economics, computing, systems are among those which are likely candidates.) A potential candidate might be expected already to have received some recognition as leader in his or her field.
d) Noted public figures. This excludes active politicians. However ex-politicians (for example, those rehabilitated by lengthy service in the House of Lords) might be considered.
e) Those who have given outstanding or otherwise inadequately recognised service to the OR Society. A positive factor is involvement in international O.R. societies. Ex-Presidents are normally excluded until after a further extended period of service to the Society or the subject.
f) Leaders of operational research societies in foreign countries.

Entry

Candidates may be nominated by a member of the Operational Research Society, or be nominated by the President Elect's / Past President's Committee. Each nomination should be supported by a statement outlining the case.

Nominations for both awards should be sent in strictest confidence to Gavin Blackett, Secretary & General Manager gavin.blackett@theorsociety.com.

The deadline for nominations is Friday 31 May 2013.

<OR>

MATHS USED TO MAXIMISE BEE POLLINATION RATES

NIGEL CUMMINGS

One in three mouthfuls of food we eat is dependent on pollination, according to the British Beekeepers Association, yet bee pollination rates are falling.

Increasing pollination rates is seen as crucial as bee colonies have declined significantly in recent years. Essex University in partnership with Chelmsford-based firm Simul Systems Ltd has started 'Project Beeswax', a venture which uses mathematical methods to identify the best positions for beehives in order to optimise pollination.

The collaboration with Essex University came about after Andrew Lewis of Simul Systems was awarded a £5,000 Innovation Voucher from the Technology Strategy Board to help develop an app to help beekeepers improve productivity.

Dr Abdel Salhi, head of the Department of Mathematical Sciences, is leading a feasibility study on the use of maths to estimate the best distribution of beehives to achieve effective pollination of trees and Simul System's aim is to use this analysis to develop an app which will provide commercial and non-commercial bee keepers with a tool to help them decide where to best place their beehives in the future to generate the best possible yield.

Researchers have visited a local orchard to investigate its configuration to help with building an appropriate mathematical model and the first phase of the project is expected to be completed by the end of March 2013.

Dr Salhi said 'I was excited to undertake this project because it seems an ideal area to deploy mathematical methods of optimisation. The underlying problem is potentially very tricky to solve. However, good approximate solutions will be very rewarding indeed. It is also a good opportunity to work with the local farming community.'

Fruit growers rely heavily on honey-bees to pollinate their trees, bushes and plants; without them there would be no fruit. Bees visit flowers to drink the nectar which provides them with the energy they need to fly and the source of food to feed their young. Flowers have evolved to be attractive to bees who act as pollinators by collecting the pollen from the stamen as they enter the flower to extract the nectar and at the same time deposit previously gathered pollen onto the pistils. Until the female has been fertilized in this way, seeds will not develop and there will be no fruit. Hand pollination is extremely tedious and hence very expensive. Bees, on the other hand, have evolved over millions of years to become highly efficient in this task.

Note: nut bearing trees and cereals are most likely to be self-pollinated or wind pollinated so are very much less dependent on bees.

Admissibility for attainment of innovation vouchers is still open, so if you are a budding entrepreneur or know someone who is looking for a cash injection for a good business idea, the bidding is still open for support from round two of the Innovation Voucher scheme. The aim of the scheme is to provide SMEs with the opportunity to work with an external expert for the first time across a wide range of themes, gaining new knowledge to help their business innovate, develop and grow.

More information about the Technology Strategy Board Innovation Vouchers can be found at: https://vouchers.innovateuk.org/ and further information about working with experts at the University of Essex or general queries about how the University can help you with your application, contact Linette Edonya, Enterprise Support Officer, by e-mail to ledonya@essex.ac.uk or by telephone on 01206 872925 .

MULTI-SCALE MODELLING REVEALS SPREAD AND PREVENTION OF CRIME

NIGEL CUMMINGS

Nancy Rodríguez, a postdoctoral scholar at Stanford has produced a paper concerning a 'traveling wave model' which suggests that it is only possible to prevent crime from spreading when the population as a whole is 'anti-crime.'

Her paper indicates that it may not be enough to crack down on crime without changing the attitude of the community in which crimes are committed. 'Crime can happen anywhere, but it usually doesn't.'

Researchers have noticed that criminal activity seems to be concentrated in self-perpetuating hotspots, and crime leads to more crime. Then, from these epicentres, crime spreads outward through the community.

Mathematicians already have a model that has been used to study this kind of behaviour. The model is called a 'reaction-diffusion-advection (RDA) system', and criminologists have found it a useful way to analyse issues like 'near-repeat victimisation' – the observation that single neighbourhoods, and even single households, see a disproportionate share of crime.

Nancy Rodríguez's area of study is particularly focused on what such models say about stopping such waves from spreading by looking at what is known as the 'gap problem' - how many resources need to be allocated to halt a wave in its tracks. Her solution may have implications for how we fight crime in the future.

Her paper, co-authored by Stanford mathematics Professor Lenya Ryzhik and Henri Berestycki of the Institute for Higher Studies in Social Sciences in Paris, concerns RDA systems because they incorporate a reaction that tends to propagate the wave, the diffusion that tends to kill it and the advection that transports it from one location to another. These mathematical models are used to analyse wavelike behaviour in a number of fields such as movement of invasive species, the propagation of genes and the spread of chemical reactions.

'Previous analysis of criminal behaviour models always assumed that the population was fundamentally pro-crime,' said Rodríguez. 'This choice is significant, because a crime wave spreading through a pro-crime population cannot be entirely stopped. You end up always having crime everywhere.'

The news is nearly as bad when the population has a neutral attitude toward crime. Although crime primarily persists in hotspots, waves of crime are just as unstoppable. However, if the population is subjected to behaviour change like an overall anti-crime stance, whereby the population is more reluctant to engage in or condone criminal activity, then two outcomes are possible. High crime rates can spread, but so can waves of zero criminal activity, and, unlike in the other scenarios, high crime rates can be stopped by adding in a 'gap.'

In Rodriguez's model world, the gap is a stretch of space where the incentive to commit a crime is zero. This corresponds to real-life disincentives to commit crimes, such as an increased police presence, with longer gaps representing more anti-crime efforts. Rodríguez also found that a long enough gap and a large enough police crackdown, for instance would completely contain a crime outbreak.

The research is theoretical at the moment and does not pretend to offer real-world suggestions about police strategy, but the primary implication of the research is that police alone are not the answer to preventing crime. Waves are only stoppable in an anti-crime environment. The model suggests that it is necessary to change the perspective of the population although the more police presence you have, the better it is.

Rodríguez's research is supported by the American National Science Foundation Postdoctoral Research Fellowship, though the implications of the findings from it may prove to be applicable worldwide.

YOUR OPPORTUNITY TO SPONSOR OR55

The OR Society Annual Conference, 3-5 September 2013
The Forum, University of Exeter, EX4 4QJ.

HARA PAPACHRISTOU

The OR Society's Annual Conference – OR55 – is the flagship conference of the Society.

It will successfully bring together practitioners, academics, researchers and students with a wide range of interests in all aspect of O.R. This well-attended conference will provide ample space for people to share their knowledge and experiences from the latest research, discuss future directions, network with the leading researchers and practitioners in the field and, of course, enjoy some time together.

The Forum, University of Exeter

This year, OR55 will be held at Exeter University between 3 and 5 September. The event will feature the usual high quality programme, including academic and practitioner presentations and the highly successful 'Making An Impact' activities for practitioners.

Sponsoring the conference offers an excellent opportunity for companies to have their brand, services and software tools presented directly to an audience of over 300 people evenly split between practitioners and academics. It also promotes direct discussions with people which could lead to meeting potential business partners or employees.

Why not take advantage of the opportunity and get involved? There is a variety of sponsorships suitable for large as well as small organisations. If you are interested you can find out more at www.theorsociety.com/OR55 or get in touch with Hara Papachristou on HPapachristou@lanner.com or Hilary Wilkes on Hilary.Wilkes@theorsociety.com

WHERE ARE THEY NOW?

The following members on the Society's mailing list have recently had their mail returned to the Membership section, presumably because they have changed their address.

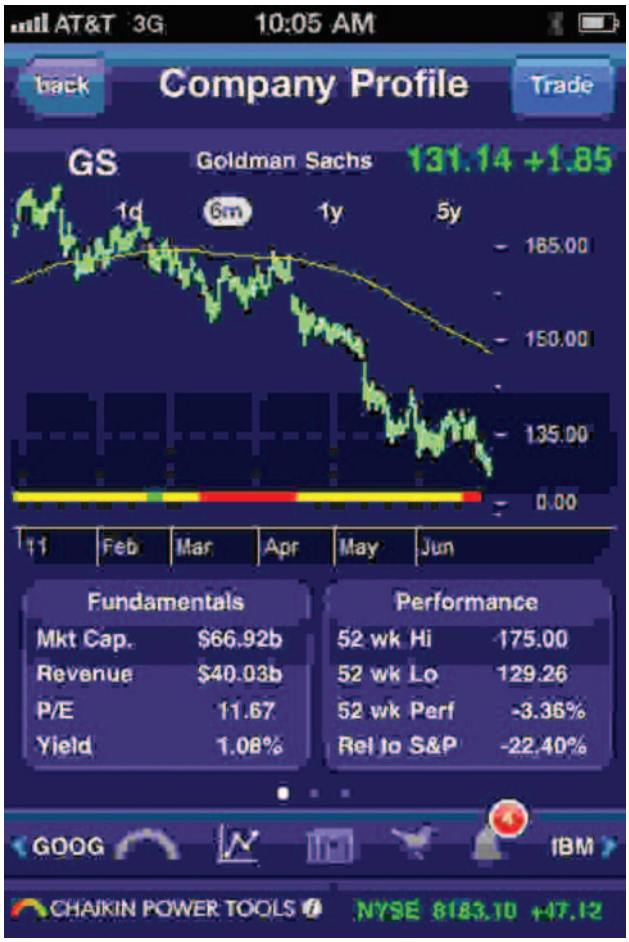
Would any member who is currently in touch with them please ask them to email Carol.Smith@theorsociety.com advising us of their current whereabouts so that we can update our database and return to a speedy and efficient service.

Gowtham Bharatwaj Srinivasan Kent

ADVANCED ANALYTICS IN THE PALM OF YOUR HAND

NIGEL CUMMINGS

Analytics from the palm of your hand is now available to IOS based tablet, android and smart phone users.



It was inevitable that analytics applications would find their way to tablet computer users, they began appearing in 2011, and the year it became possible to run some forms of Google Analytics on IOS based tablet devices. Initially quite simple to use, the saving grace of these 'early' analytics apps was that they were free.

Analytics for iPad for example was, and remains, free to download, install and use. A range of paid for analytics tools is rapidly becoming available to IOS and other operating system users. The free Google Analytics application is quite powerful insomuch as it gives users access to all Google Analytics reports, albeit with 'small advertisement' intrusions along the way. These can be removed if you pay to upgrade to the premium version. Please note that in order to harness the power of Google analytics on your iPad, iPhone or Android device you will need a Google Analytics account which you can get by registering at: http://www.google.com/analytics/

Free Google analytics for iPad for example will enable the user full access to all Google analytics reports including real-time reports and the ability to save reports for off-line access. It also provides multiple websites and network support, customisable timeframes, the ability to compare to timeframes, to each other and quick data selection: today's reports, yesterday's reports, this week's reports, this month's reports and more. In addition, there is a built-in browser to quickly check websites under scrutiny and 'Drop box' connectivity for off-line reports. The program is fully able to communicate with the outside world due to its ability to send e-mails as Adobe Acrobat files, CSV or Microsoft Excel format files. Analytics for iPad and other tablets is optimised for daily use; it saves your last selections and presents them on app launch. It uses bookmarks to get reports; one tap of the screen is all that is needed to share reports without actually leaving the analytics app.

Chaikin Analytics LLC, a provider of institutional-grade stock analytics to asset managers and self-directed investors, have just launched Chaikin Analytics for iPad, an investment analytics workstation built specifically for the iPad and iPad Mini.

Chaikin Analytics features proprietary analytics, ratings, technical indicators and models to provide dynamically updated stock analysis, actionable trading signals, customised watch lists and flip charts with indicators for investment professionals who require a comprehensive financial analytics workstation anytime, anywhere.

The application was developed by Marc Chaikin and the team that pioneered the first real-time analytics workstation for institutional money managers and trading desks (namely, Instinet Research and Analytics, or 'R&A'), the centrepiece of the analytics is the Chaikin

Power Gauge rating, a 20-factor rating that has been independently back-tested and proven successful at identifying a stock's potential 3-6 months out.

Chaikin Analytics for iPad also features buy/sell alerts and proprietary Chaikin technical indicators, including industry standard Chaikin Money Flow and Chaikin Bands. It also gives access to on-demand four-page research reports on 5,000 stocks, updated daily. In combination, these features enable the analysis needed to manage a portfolio of any size while making profitable decisions.

Chaikin Analytics for iPad is the latest addition to a suite of established stock investment tools developed by Marc Chaikin and customised for use on desktops, iOS and now Android platforms. It will cost you at least £95 per month on a rolling tariff. For more information on Chaikin Analytics go to: http://www.chaikinanalytics.com/

Another company in the premium analytics market for tablet computers is Localytics, this company's mobile app analytics gives powerful, actionable insights and deep user engagement data and is said to utilise an intuitive and powerful user interface, which provides accurate real-time user tracking, in-app funnels, and cohort analysis. Localytics support a wide range of hand held computing platforms – currently Android, iOS, HTML5, Windows Phone and BlackBerry technology platforms. It works out slightly cheaper than Chaikin, but provides more general analytics capabilities for a subscription fee of around £60 per month. A 30-day free trial of Localytics Premium for mobile devices can be accessed at: http://www.localytics.com/premium-mobile-app-analytics/

In conclusion, there is a choice of suppliers of complex analytics which can be performed from hand-held devices without the constraints of super computers or desktops.

<OR>

PREDICTIVE ANALYTICS UPDATE

NIGEL CUMMINGS

Predictive analytics may reveal secrets you would rather not divulge

Predictive modelling could reduce unnecessary lab tests for intensive-care patients with gastrointestinal bleeding, according to a new study published in the International Journal of Medical Informatics. Researchers scrutinised a database of 746 patients and found that predictive modelling based on 11 measurements could accurately classify more than 80% of both necessary and unnecessary lab tests. They achieved an average reduction of 50% of eight common gastrointestinal lab tests. The researchers from the Massachusetts Institute of Technology said they planned to expand their work to include a number of underlying medical conditions and additional laboratory tests.

Meanwhile in the Journal of Chemical and Information Modelling, scientists have reported that using predictive modelling to project negative side effects from prescription drugs was a viable, less-costly way to test for drug side effects than current methods.

According to a paper published in the Proceedings of the National Academy of Sciences, researchers have reported success predicting when and where flu outbreaks will peak using data from Google Flu Trends and techniques for weather forecasting.

Jim Manzi, the founder and chief of Applied Predictive Technologies (APT), recently claimed that predictive analytics could help firms to get 'about three per cent better at guessing' what a consumer would like to buy. 'Realistically, what predictive modelling does not say is: 'Now I know for a fact that you want this'. What it means is I get about three per cent better at guessing - and that is worth a lot of money'.

Its software tracks customer habits in an attempt to help retailers, banks and other organisations to predict future outcomes and alter their strategies accordingly. This trend in utilising predictive analytics to work out what customers need has also been highlighted by the New York Times, which reported that US retailer 'Target' predicted a high school girl's pregnancy by analysing her shopping habits, and then with the use of predictive analytics, offered her a selection of products that are typically bought in early pregnancy. The retailer reportedly sent out coupons for other products that she might have needed for her new baby. The girl's father, meanwhile, had not been aware - up until receiving the coupons - of his daughter's situation!

Last month, the Office of Fair Trading (OFT) launched an investigation into the extent to which businesses are using customer data to target consumers with personalised prices. Manzi said that if society became uncomfortable with consumer-facing businesses using predictive analytics tools to tailor personalised deals then government could legislate against it. He also said, 'All predictive modelling and analytics are doing is helping companies to get a little bit more accurate at predicting who wants what.' It will be interesting to see if any more predictive analytics faux pas leak into the press in coming months.

<OR>

MANAGING MARKET UNCERTAINTY WITH ANALYTICS

NIGEL CUMMINGS

Analytics can be applied to increase efficiencies in electrical energy supply organisations.

IBM, one of the big names in analytics service providers, recently worked with PPB (Power Procurement Business), an electricity supplier in Northern Ireland, and part of the Viridian Group of companies, to determine its electricity and fuel hedging strategies.

A range of analytical models and tools was created by IBM Global Business Services to enable PPB to meet the requirements of its new role in the single market. One of the tools developed, was an auction management tool, this enabled PPB to find new ways to optimise the management of price- and volume-risk, minimise the chance of financial loss, and reduce the time taken to manage electricity auctions.

Power NI (formerly NIE Energy) also applied the resultant analytics based tools to help it determine appropriate electricity and fuel hedging strategies. Power NI's PPB is also responsible for purchasing power under long-term contracts from independently owned generators and it sells that power directly to a spot market pool.

The creation of a Single Electricity Market (SEM) in Ireland and Northern Ireland in late 2007, created significant changes for PPB. The business was required to sell all the power it purchased from generators into a market pool, where it would be purchased by electricity supply companies. A major challenge posed by the creation of the SEM was the management of price exposure: the price of electricity in the SEM is always volatile and hard to predict and always poses considerable risks to PPB's operation.

Concerning the application of new modelling tools and analytics to the problems posed by operating in a single market, David Macartney, Commercial Manager of Power NI, said: 'We had just under two years before the single market was established to develop a completely new range of capabilities and ways of working that would enable us to comply with all the new rules and regulations. It was a very intense time, as this was uncharted territory for all of us. We were responsible for handling a turnover of roughly half a billion pounds, and we needed to rapidly develop a host of new tools that would allow us to better manage our exposure to new market risks.'

Working with IBM Global Business Services provided the solutions. Power NI became fully equipped, as a result of the alliance, to help its businesses through the challenges posed when entering into the new electricity market. In development terms the production of the tools was relatively quick for the market in which they were intended. Nevertheless a spokesman for PPB said, '…we had a team of experienced consultants working alongside us at our offices over the two years leading up to the establishment of the all-island electricity market. This was vital in helping us to find the solutions that best fit our needs.'

A large part of the project involved designing and implementing a set of analytical models and tools, which could be used to design energy trading strategies and to enable the company to auction electricity derivatives to hedge its risk in the market. One of the first applications that IBM developed was an auction management tool, this helped PPB manage the electricity auctioning process.

Contracts under auction conditions can often be valued at millions of pounds, so it is essential that well designed analytical tools are available in order for companies utilising them, to best manage those activities which involve risk. The auction management tool helped to ensure that operational risks associated with hosting auctions were mitigated and auction participants could submit bids based on the correct information. By using the application, PPB was able to reduce the time taken to determine auction results from an hour to a few minutes!

IBM also developed a strategic analysis application and this helped PPB to analyse historical costs and revenues and forecast for the future with scenario planning. Thanks to its partnership with IBM, PPB has been operating successfully since the SEM came into operation in November 2007, and the business has been able to embed new processes into daily operations to allow it to gain best advantage from analytical tools in managing the risk, pricing and auctioning of electricity derivatives.

THE FUTURE IS…

NIGEL CUMMINGS

Orange juice is just an orange liquid until you apply the Black Book algorithm…

Have you noticed how good orange juice is tasting straight from the super market shelves these days –no longer bitter, watery or lacking flavour, it tastes, well of oranges really, as it should do. But ensuring that the orange juice you drink tastes consistently just how the makers want it to taste is very much down to analytics.

Coca Cola for example, which makes Simply Orange and Minute Maid, two of the most popular brands of orange juices available in Europe, has an algorithm called the 'Black Book' which allows it to achieve this high level of consistency.

To bring that 'just squeezed' taste to the masses, fruit juice processing companies have to enlist technologies including maths. Physically the process entails the 'stripping' of oxygen which strips the flavour and then the addition of artificial flavour to the juice in the form of 'flavour packs' made by flavour and fragrance companies.

Apart from the physical actions required there is also a great deal of maths going on. Fruit juice manufacturers use amazingly detailed algorithms to figure everything out, the processes involved from picking to blending to packing, to ensure that every bottle or carton of juice tastes identical to every other one.

The Coca Cola Company is a good example of analytics in juice production, the company produces its successful 'big box' OJ brand utilising algorithmic controls throughout the whole manufacturing process. The architect of Coke's OJ model is consultant Bob Cross, Revenue Analytics. He says that his Black Book algorithm 'is definitely one of the most complex applications of business analytics. It requires analysing up to 1 quintillion decision variables to consistently deliver the optimal blend, despite the whims of Mother Nature.'

At the core of Coke's plan in the U.S. is 100% not-from-concentrate OJ, for which consumers are willing to pay as much as a 25% premium. Yet producing the beverage is far more complicated than bottling soft drinks. Juice production is full of variables, from weather to regional consumer preference, and Coke is trying to manage each from fruit grove to glass

Bob Cross's Black Book algorithm has a massive amount of data within it, data on over 600 of the flavours that go into an orange in fact, detailing the acidity, sweetness, etc. of each batch of juice. Once it profiles the raw juice, it issues a recipe of how to blend the juice to get it into the perfectly consistent taste.

In peak season, roughly April to June, oranges can go from grove to glass in less than 24 hours. Fibre-optic cables keep computers at Coke's juice bottling plants in constant contact so juice is piped more efficiently. Inside the bottling plant, 'blend technicians' at a traffic control centre carry out Black Book instructions prior to bottling. The weekly recipe is tweaked constantly.

Black Book incorporates external factors such as weather patterns, expected crop yields and cost pressures to help Coke plan so that supplies will be on hand as far ahead as 15 months. Using the model, if there is a hurricane or a freeze, Coke can quickly re-plan the business in 5 or 10 minutes. It even uses satellites to monitor crops to tell farmers when to pick the fruit. It is an algorithm which considers every possible angle for orange juice, but that is not all, so successful has it been, that Black Book, or versions of it, are likely to be rolled out to any company seeking to find and maintain consistency of quality, product or service.

LINGUISTIC ANALYTICS

NIGEL CUMMINGS

A commercial Big Brother may be waiting for you at the end of every telephone call…

In 2009 I read a fascinating paper by Avik Sinha, a researcher at IBM, specialising in the application of natural language processing techniques for the purpose of mining information relevant to software engineering activities. His paper presented a novel linguistic engine made of configurable linguistic components for understanding natural language use case specification; and results of the first of a large scale experiment of application of linguistic techniques to industrial use cases.

Moving forward to February 2013, I now see a news report concerning Telefónica, the owner of the O2 network in the UK. Apparently Telefónica is developing technology which listens in on personal calls to draw up a psychological profile of a speaker according to their tone of voice.

A team of engineers and psychologists in Telefónica's Barcelona research facility has built a linguistic analysis engine to mine and interpret data from phone conversations. The engine can construct personality traits with 80% accuracy. The company so far has only trialled the technology using the voices of internal volunteers, though analysts briefed on the project said it could be of interest to advertisers. Telefónica insists that it has no such plans.

By tracking the location and duration of conversations, and recording spikes in activity, the 'call graph' could also alert emergency services to natural disasters or terrorist attacks. Could this be the beginnings of a telephonic 'Big Brother'?

From an analytics perspective the level of insight provided by linguistic analysis engines could be of interest to advertisers. In the UK, the company has teamed up with rival carriers Vodafone and Everything Everywhere to create an advertising sales house and virtual wallet platform. The joint venture is called 'Weve', its purpose will be to build detailed profiles of mobile phone subscribers who opt-in to the service in exchange for promotions such as discounts from retailers, and then sell this information to advertisers looking to target specific audiences. 'Opt-in' is the operative phrase here, to utilise such information without gaining permission from communications services subscribers could be in contravention of Data Protection Act.

Apparently Telefónica's linguistic analysis engine can provide a 'deep level of granularity', for analysis. Telefónica currently says the technology will only analyse a person's tone of voice, rather than what they are saying and that it will only be used with opt-in consent from the customers. It is, however, not a giant step from this to exploitation.

A spokesman Weve has said that: 'This is a proof of concept that our innovation lab has been working on to empower people with their own data to see what it says about them. There are no plans to commercialise this and absolutely no intention of offering this information to advertisers.'

The bottom line is this technology can analyse private/confidential personal telephone calls to extract information about a caller's 'personality & preferences'. How long will it be before this information is made commercially available, despite Weve's assurances?

FIRST DATA FARMING, NOW DATA CULTIVATION - HOW DO THEY DIFFER?

NIGEL CUMMINGS

We recently ran a feature article on 'data farming', an emergent technology largely used by the military in the United States and highlighted by Edward Lundquist who published an article about Data Farming in Defense News.

Besides 'data farming' there is also 'data cultivation'. Data farming refers to processes and methods involved in determining the most appropriate data collection or best fit data for data analysis. Data cultivation however, refers to a technique for capturing data about what is important in a particular event and working only with that data so that analysts' data mining models can be rerun many times to gain better results than conventional data mining would accomplish.

Data farming seems to be useful in those situations where it can enhance data that analysts already have at their disposal - the type of data that needs to be filtered in order to find the most relevant component.

Data Cultivation is already a feature of the services provided by marketing agencies. MonkeyFist Marketing, for example, provides customisation, optimisation and monetisation of integrated sales and marketing solutions for restaurants, retail stores and service-based businesses. Most marketing companies tell their clients how important data collecting is to business and how good they are at doing it. MonkeyFist however, is not like most marketing companies. They utilise a wide range of traditional and creative in-store and online data collecting programs, BUT they also utilise the relatively new technologies associated with data cultivation. They claim that data cultivation, as compared to simple data collection, is the important 1st 'Spoke' in Perpetual Cycle Results. MonkeyFist has a philosophy of data cultivation which they say has been tried tested and proven in their 'Fox In The Hen House' program. More information on this at http://monkeyfistmarketing.com/ .

Cultivation by the way is possibly going to be an important buzzword we should all be aware of. Reid Hoffman, the founder of business-oriented social networking site LinkedIn, uses it liberally with regard to the massive amounts of social data available on the Internet. He believes the availability of such data will change the business world by allowing for the development of products that yield analytics from user relationships and identities.

As long ago as June 2009, Reid Hoffman gave a video interview on IdeasProject discussing how new products will be created from social data. 'Once you have all these piles of data, people will build products out of the synthesis of this information. I think the Web 2.0 platform concerning actual identities and relationships is really just at the beginning stages of its growth-we're not close to even the midpoint of this development.' To see this interview take a look at:
http://www.websitemagazine.com/content/blogs/posts/archive/2009/06/30/online-social-data-and-relationship-cultivation.aspx

BIG DATA – MOVING BEYOND THE HYPE

AJ THOMPSON, DIRECTOR OF ENTERPRISE SOLUTIONS FOR NORTHDOOR

Big Data is an evolution rather than a revolution.

Hailed as the next big technology trend by vendors and analysts alike, Big Data is big news. It is also big business. With data volumes growing exponentially, statistics are continually published in the effort to convey how big is Big when it comes to Big Data. According to IDC, 2.7 zetabytes of digital data exists today and is growing at a rate of 2.5 billion gigabytes per day.

While Big Data is clearly a key business priority that is expected to add significant value to organisations, it has also become difficult to get beyond the hype.

Big Data is simply a natural progression of how organisations access, analyse and use information for the running of their businesses. Therefore we see Big Data as an evolution (rather than a revolution) that above all compels organisations to re-examine what they traditionally consider as business information.

Today businesses want relevant information at their fingertips and they want the ability to analyse this information quickly and easily. The challenge is that data has become so vast and varied that the traditional approaches to managing and analysing data can no longer meet the increasing demand. The good news is the technology is available to tackle these challenges, and Big Data tools can deliver new levels of insight fast. However knowing where to start can be overwhelming. The real key to success lies in how you go about identifying the data that will be useful and relevant to your organisation, how you examine this data, and then understanding how to store, categorise, organise and use it for competitive advantage.

There are plenty of real-world applications of Big Data today. For example in the insurance world, catastrophe and loss modelling are the two biggest data analysis challenges. Big Data is helping insurance companies better understand how events are changing and the effect this might have so that they can better manage risk. Retailers are using Big Data so that they can provide dynamic pricing and predictive analytics. They are creating up-to-the minute customer profiles which allow them to better predict buying patterns. Big brands are also using Big Data to provide better customer service. By harnessing unstructured information that sits outside the organisation, they can find out what customers are actually saying about them at any given moment and respond accordingly in real-time.

Common sense and pragmatism need to be applied when approaching a Big Data project. First clearly identify the business requirements. What are the key Big Data requirements that will provide the most value to the business? Is there a strong business case based on measurable outcomes? Is it sponsored by a business leader? Is there a pilot project that will deliver a quick win?

We recommend that those considering a Big Data initiative first focus on tangible business outcomes and then think small to think big. It might be counterintuitive but it could make all the difference in achieving successful outcomes. Here we provide practical recommendations on how to approach a Big Data project:

1. Understand that Big Data is a business-driven solution

Success will be dependent on meeting the needs of lines of business – IT is the enabler. First identify the business requirements then look to the infrastructure, data sets and analytics to support the business opportunity.

2. Establish a clear business case

For many organisations, the traditional approach to data analytics has limitations. Put a cost on it – it is the difference between having information at your fingertips in minutes as opposed to days, weeks or even months.

3. Start small, focus on quick wins

Do not try to analyse everything at once. Focus on a specific area that will deliver a quick return to demonstrate the capability of the technology.

4. Take a staged approach

Start a pilot programme by selecting a business unit or function where you think the Big Data opportunities and benefits will be. Develop proof of concepts or prototypes before you make huge technology investments. A gap analysis between your current state and desired outcome will be helpful! Where possible, benchmark yourself with industry best practice.

BIOMETRICS TECHNOLOGIES TO REDUCE RISK IN FINANCIAL TRANSACTIONS

NIGEL CUMMINGS

Biometric security systems have proved their worth in border control and for security at airports, now it is time banks and other financial institutions recognise their worth.

In previous issues we have published news items regarding developments in biometric security and in particular the application of biometrics to airport and border security. Now it seems biometrics has found a new home in banking. According to the Biometrics Research Group the implementation of new biometric technologies in the banking industry has the potential to cut a financial institution's operational risks by at least 20% over the next 10 years.

With the advent of electronic banking, banks and financial institutions alike have been enabled to reach vendors and customers in far-flung parts of the globe and conduct transnational business. However, in the process, financial institutions in particular have experienced exponential growth in risk to their systems and processes.

Regrettably operational risks that financial institutions face are increasing due to the elimination of face-to-face service with the advent of electronic banking. Banks must verify the legitimacy of customer identifications, transactions, access and communications electronically. Passwords and PIN codes are, alas, only secure provided only the owner and the system being accessed know what they are. In theory, biometric data should be unique to the user and virtually impossible to imitate

Implementing a biometric-enabled authentication system can be a very efficient method of protecting the technological assets of an enterprise against the attacks of internal and external intruders. In terms of banking customers, a biometric identifier can measure an individual's unique physical characteristic or behaviour and compare it to a stored digital template to authenticate that individual. A biometric identifier representing 'something the user is' can be created from sources such as a customer's voice, fingerprints, hand or face geometry, the iris or retina in an eye, or the way a customer signs a document or enters keyboard strokes.

The success of a biometric identifier rests on the ability of the digitally stored characteristic to relate typically to only one individual in a defined population. Although not yet in widespread use by financial institutions, biometric identifiers have been in use for physical access control for some time in certain areas.

Financial institutions can use biometric identifiers for a single or multi-factor authentication process. Automated Teller Machines (ATMs) that implement iris-scan technologies are an example of the use of a biometric identifier to authenticate consumers. The biometric identifier may replace the personal identification number (PIN). A customer can also be asked to supply a PIN, password or additional card reader output information to supplement a biometric identifier, making it part of a more secure two or even three-factor authentication process.

Financial institutions may also use biometric identifiers for automating existing processes, thereby reducing costs. For example, a financial institution may allow a customer to reset a password over the telephone with voice-recognition software that authenticates the customer.

The biggest problem with biometric authentication is in establishing and validating the identity of the individual initially. At present, this requires personal contact with the institution. A PIN can be sent to an individual who will be required to provide a secondary authentication before it is activated – this usually takes the form of a pre-agreed password which will normally have been established following an interview. Fingerprints, iris scans, voice recognition etc all require the use of an electronic device that the individual is unlikely to possess to capture the basic data initially. Some of these can also change with time or due to the state of the individual – a simple cold may change one's voice by an unacceptable degree.

Any system must minimise the probability of a false positive, i.e. acceptance of the wrong person. At the same time, users will soon take their business elsewhere if the probability of a false negative is also too high – this is when it rejects the right person. The more tiers of authentication required the lower the probability of a false positive but the more tedious it becomes to use.

Users may also be concerned that the data could be used for alternative purposes. Fingerprints have long been associated with forensic evidence. DNA can be used by insurance companies to look for susceptibility to genetically related conditions as well as its use in forensics.

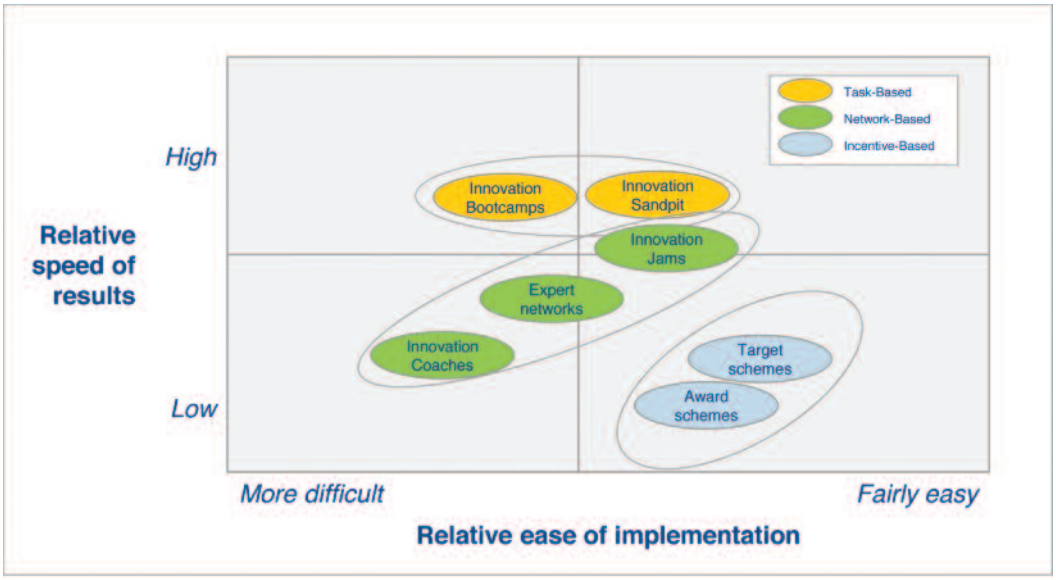
From the institution view, the system needs to require the minimum of manual intervention. Authentication should be done during the login-in process without the customer even comes into contact with a human. Anything that can reduce processing time, especially human, will potentially benefit the institution. From the customer's view, the system should be quick and easy to use with the minimum amount of effort – e.g. re-scanning. Customers may also be impressed if, when they get to the cashier or checkout, the person or system already knows their name and possibly some details about them – that they have just recovered from an illness, it is their, their partner's or one of their children's birthday, etc in the way that cashiers and shop assistants would have done in pastimes.

A quick, efficient and friendly service is, after all, an influencing factor in attaining and retaining customers.

INNOVATION QUICK WINS – A GUIDE TO SOME PRACTICAL TOOLS

RICK EAGAR

Business and academic media are awash with theories about what organisations should do to improve their innovation performance.



Indeed, at Arthur D. Little we have published extensively on the subject. What most experts will tell you, including ourselves, is that there is no instant formula for success. Effective innovation requires a comprehensive approach, starting with strategy, supported by strong processes, an efficient organisation and resources, and an innovative culture. And it can take a long time to achieve.

Fortunately there is a wide range of practical tools and techniques that can help achieve some innovation quick wins, raise the profile of innovation and start to change the culture, even if they don't on their own provide the complete solution. Many of these tools are well known and some less so - but how do you decide which ones to use, and how can you make sure they work?

In this article we provide a brief round-up of some widely used tools both old and new, including their strengths and limitations, key success factors and when and where to use them.

Some commonly used quick-win innovation tools

The seven tools we have covered here (shown above) have all been fairly widely used in industry with some success. They all share the characteristics of being fairly tangible in terms of what they are and what they do, and they have broad applicability. They are able to be implemented in most organisations without the need for extensive preparatory groundwork or adaptation.

Selecting the right tools

When selecting the right tools to use and in what sequence, it is useful to consider the balance of the objectives you are seeking and how quickly you need to show some results.

Task-based tools

Innovation Bootcamp

An Innovation Bootcamp is an immersive experience in which small teams of managers are tasked with developing and then pitching a new product, service or process idea to a senior management 'Dragon's Den'-style panel. Typically the bootcamp takes place over a period of two to three weeks, with team members taken 100 per cent offline from their normal jobs, usually in an offsite location. With the help of a coach or trainer, the teams are provided with a brief and encouraged to think creatively to generate ideas, use systematic tools for screening and evaluation, then to build an outline business case and present it to the senior panel. The aim is usually to end up with at least one of two cases viable enough to be given the green light for further development.

Innovation Sandpit

The Innovation Sandpit, conceived by EPSRC, is a team-based exercise to develop solutions to problems that brings together participants from across functions and disciplines, including

external organisations. Through an intensive four-to-five-day workshop, there is a deepening understanding of the challenge, a clear definition of the problem and generation of a suite of prioritised, peer-reviewed solutions. This tool promotes more radical innovation thinking and solutions by drawing on the diverse backgrounds of the participants to address a defined challenge.

Network-based tools

Innovation Coaches

Innovation Coaches (or 'Champions') are intended to engage different parts of the organisation in innovation-orientated activities such as idea management (generating, enriching, connecting), coaching in good innovation practice, implementation of award schemes and exchange of knowledge and insights. The Innovation Coach role is normally part-time (e.g. 20-30 per cent), and is usually undertaken by well regarded middle managers with good people/networking skills.

Innovation Jams

Innovation Jams are time-limited, web-based, large-scale cross-sector discussions about specific hot topics, likened to a musical jam session in which the participants react to and spark off each other's contributions. Typically Innovation Jams are conducted internally within large corporations, and are meant to be quite intensive, normally lasting only a few days. They use blog-style IT platforms and the exchanges are moderated.

Expert networks

One common barrier to innovation is the inability to capture and integrate isolated pockets of expertise around the organisation to solve problems or create new opportunities. To address this, corporations have been increasingly applying social media tools to strengthen networks of internal and external experts. Many companies have a wiki-style knowledge database and are using an enterprise social networking solution to maximise connectivity and speed of response.

Incentive-based tools

Award schemes

Innovation award schemes are set up to encourage staff innovation efforts through some form of publicised reward. Typically they are either recognition-based (i.e. aimed at recognising individual 'good innovation behaviour') or results-based (i.e. aimed at rewarding achievement of business-related outcomes through innovation, often through a team rather than an individual). Most award schemes include some combination of monetary prizes and public recognition and celebration.

Target schemes

This refers to the practice of setting corporate, team and individual innovation-related targets, and measuring progress against them using suitable metrics. While this in itself is a broad topic, in essence targets may be set for *input activities* (e.g. the number of introduced innovation ideas per employee or from an external source, total innovation investment [FTE + funding]), *process activities* (e.g. expected value of new business project pipeline [MEUR], percentage of projects on time and within budget) and *outputs/outcomes* (e.g. innovation-based new sales ratio [per cent], total innovation return [product / business ROI + savings ROI]). Provided that it is feasible and straightforward to gather the required data for the metrics, innovation target-setting can be accomplished relatively easily.

What next for quick-win innovation tools?

So what of the future for quick-win innovation tools? Clearly there is currently much activity around further development of social networking approaches to support innovation efforts, including much greater involvement of customers and crowds. In our recent global survey of nearly 100 chief technology officers to gauge their views on the future of innovation management, 'enhanced web and social media' was voted as one of the top topics for the next few years. The use of game-playing or *gamification* is also increasingly being applied in conjunction with networking tools and award schemes for innovation processes – for example, creating idea-trading platforms, points systems and other competition features to attract more engagement from staff, customers and the crowd. Finally, there is continuing work on developing better tools to transform culture, diagnosis, monitoring and improvement, though it remains open to question whether any tool can really achieve truly rapid sustainable culture change.

In Conclusion

While there are certainly no shortcuts to innovation excellence, quick-win tools can play a useful role in building momentum and demonstrating results. It is perhaps tempting for companies to focus straight away on the more 'sexy' end of the spectrum – such as novel creativity and ideation techniques, social media tools, crowdsourcing and the like. These certainly have their place. But companies should make sure they have not overlooked the more established tools like coaches, bootcamps and incentives, which, although not new, have a proven track record - and often involve a great deal more face-to-face interaction than the virtual tools.

Leading companies are using all these tools – and more – in combination, all within the framework of a broader innovation strategy led from the top of the company, supported by an effective set of innovation management processes and an aligned organisation. Unfortunately, there is no substitute for repeated and sustained effort, with a constant stream of fresh approaches and ideas. Ultimately, innovation excellence is all about people, not systems.

(Unfortunately space has not permitted the inclusion of a breakdown of the strengths and weaknesses, advantages and disadvantages of these tools. To read the full article, visit http://www.adlittle.com/downloads/tx_adlprism/Innovation_quick_wins.pdf. Ed)

March 2013

7TH IMA Quantitative Modelling in the management of health and Social Care Conference
25-27 March 2013, London, UK http://www.ima.org.uk/conferences/health2013.cfm

April – June 2013

EVO2013, 16th European Conference EuroGP, EvoCOP, EvoBIO, EvoMUSART and EvoApplications
3-5 April 2013, Vienna, Austria www.evostar.org

YOR18, Young OR18 Bi-annual Conference for O.R careers of less than 10 years
9-11 April 2013, University of Exeter, UK http://www.theorsociety.com/Pages/Conferences/YOR18/YOR18.aspx

FUBUTEC'2013 9th Annual Future Business Technology Conference 2013
15– 17 April 2013, Lincoln, , UK http://www.eurosis.org/cms/?q=node/2281

10th ESICUP Meeting
24-26 April 2013 Lille, France, http://paginas.fe.up.pt/~esicup/extern/esicup-10thMeeting

ICMSAO'13 5th International Conference on Modeling, Simulation and Applied Optimization
28-30 April 2013, Hammamet, Tunisia www.icmsao.org

Optimization and Big Data (Workshop, Trek & Colloquium)
1-3 May 2013 Edinburgh, Scotland http://www.maths.ed.ac.uk/~prichtar/Optimization_and_Big_Data

ISORAP 2013 International Symposium on Operational Research and its Applications
8-10 May 2013, Marrakech, Morocco http://isorap.uiz.ac.ma/

ISCRAM2013: The 10th International Conference on Information Systems for Crisis Response and Management
12-15 May 2013, Baden-Baden, Germany http://iscram2013.org

IIE 62nd Annual Conference & Expo
18-22 May 2013 San Juan, Puerto Rico http://www.iienet2.org/annual2/

ISC'2013 11th Annual Industrial Simulation Conference 2013
22-24 May 2013, Ghent, Belgium http://www.eurosis.org/cms/?q=taxonomy/term/334

CIAC 2013 8th International Conference on Algorithms and Complexity
22-24 May 2013 Barcelona, Spain http://albcom.lsi.upc.edu/ciac2013

CORS 2013 The 55th CORS Annual Conference
27-29 May 2013, Vancouver, BC, Canada http://cors.forestry.ubc.ca

KIM2013 Knowledge and Information Management conference
4-5 June 2013 Meriden, UK www.theorsociety.com//KIM2013/aspx

CEIT 13 International Conference on Control, Engineering & Information Technology
4–7 June 2013, Sousse – Tunisia : http://ipco-co.com/Invited-Sessions.html

ICAPS Summer School on Planning and Scheduling
4-7 June 2013 Perugia, Italy http://icaps13.icaps-conference.org/student-program/summer-school/

MathSport 2013 – The 4th International Conference on Mathematics and Sport
5-7 June 2013 Leuven, Belgium http://www.mathsportinternational.com

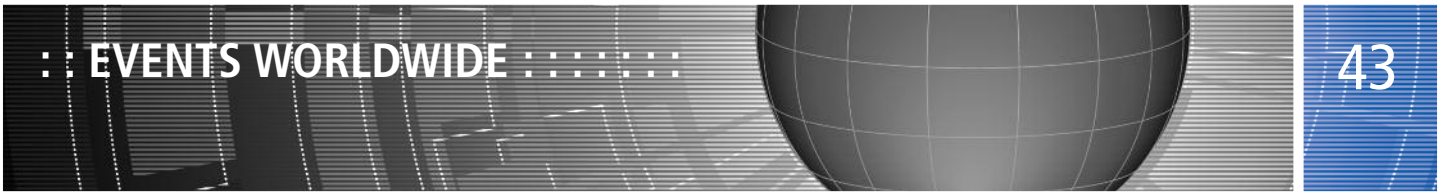
SEA2013 12th International Symposium on Experimental Algorithms
5-7 June 2013, Rome Italy http://sea2013.dis.uniroma1.it

ICAPS'13 The 23rd International Conference on Automated Planning and Scheduling
10-14 June 2013 Rome, Italy http://icaps-conference.org

MCDM2013 22nd International Conference on Multiple Criteria Decision Making
17-21 June 2013 Málaga, Spain http://www.mcdm2013.decytec.ccee.uma.es/index.php

NUMTA2013: Numerical Computations: Theory and Algorithms International conference
17–23 June 2013 Falerna, Italy http://wwwinfo.deis.unical.it/~yaro/numta2013

MIM 2013 IFAC Conference on Manufacturing Modelling, Management and Control
19-21 June 2013 Saint Petersburg, Russia http://www.mim2013.org/



DEA2013 11th International Conference on Data Envelopment Analysis
27-30 June 2013 Samsun, Turkey http://DEAsociety.org/dea2013

11th EUROPT Workshop on Advances in Continuous Optimization
26-28 June 2013 Florence, Italy www.europt2013.org

CCISE 2013 International Conference on Complexity, Cybernetics, and Informing Science and Engineering
30 June-6 July 2013 Porto, Portugal www.2013iiisconferences.org/ccise

AISE 2013 The Special Track on Academic Informing Science and Engineering
30 June-6 July 2013 Porto, Portugal www.2013iiisconferences.org/aise

July – September 2013

Euro XXVI and INFORMS Joint Conference
1-4 July 2013 Rome, Italy http://euro2013.org/

IMSI0 5 2013 The 5th European Conference on intelligent Management Systems in Operations
3–4 July 2013, University of Salford, UK email s.vadera@salford.ac.uk

GECCO 2013 GENETIC AND EVOLUTIONARY COMPUTATION CONFERENCE
6-10 July 2013, Amsterdam, The Netherlands http://www.sigevo.org/gecco-2013

VeRoLog 2013 EURO Working Group on Vehicle Routing and Logistics Optimization
7-10 July 2013 Southampton, UK https://www.ocs.soton.ac.uk/index.php/verolog/verolog2013

ORAHS 2013 39th ORAHS 2013 Conference
7-12 July 2013 Istanbul, Turkey, http://orahs2013.org

EISTA 2013 The 11th International Conference on Education and Information Systems, Technologies and Applications
9-12 July 2013 Orlando, Florida, USA www.2013iiisconferences.org/eista

IMSCI 2013 The 7th International Multi-Conference on Society, Cybernetics and Informatics
9-12 July 2013 Orlando, Florida, USA www.2013iiisconferences.org/imsci

IMETI2013 The 6th International Multi-Conference on Engineering and Technological Innovation
9-12 July 2013, Orlando, Florida, USA www.2013iiisconferences.org/imeti

WMSCI 2013 The 17th World Multi-Conference on Systemics, Cybernetics and Informatics
9-12 July 2013 Orlando, Florida, USA www.2013iiisconferences.org/wmsci

DeMset 2013 Design and Modeling in Science, Education, and Technology
9-12 July 2013 Orlando, Florida, USA www.2013iiisconferences.org/demset

QRMSE 2013 Qualitative Research and Methodologies in Science and Engineering
9-12 July 2013 Orlando, Florida, USA www.2013iiisconferences.org/qrmse

SoCS 2013 International Symposium on Combinatorial Search
11-13 July 2013 Leavenworth, WA, USA http://socs13.search-conference.org/

30 ISMOR 30th International Symposium Military Operational Research
29 July -2 August 2013, Royal Holloway, University of London, UK www.ismor.com

GAME-ON NA 2013 7th Annual International N-A Conference on AI and Simulation in Games
19-21 August 2013 San Diego, USA http://www.eurosis.org/cms/?q=taxonomy/term/337

MISTA 2013 Special Track on Educational Timetabling
27-30 August 2013, Gent, Belgium http://www.schedulingconference.org/

NICSO 2013 International Workshop on Nature Inspired Cooperative Strategies for Optimization
2-4 September 2013 Canterbury, United Kingdom http://www.nicso2013.org

OR55 Operational Research Annual Conference
3-5 September 2013 Exeter, Uk http://www.theorsociety.com/pages/conferences/conferences.aspx

International Conference on Operations Research
3-6 September 2013, Rotterdam, The Netherlands, www.or2013.org

EPIA 2013 Artificial Life and Evolutionary Algorithms
9-13 September 2013, Azores - Portugal http://www.epia2013.uac.pt/

Continued on next page

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October - December 2013

IICAI 2013 The 6th Indian International Conference on Artificial Intelligence
18-20 December 2013 Tumkur, India. http://www.iiconference.org

DMSI 2013 - International Conference on Advances in Data Mining and Security Informatics
18-20 December 2013 Tumkur, India. http://www.iiconference.org

International Conference on Image, Video and Signal Processing 2013
18-20 December 2013 Tumkur, India. http://www.iiconference.org

JOURNALS & SPECIAL ISSUE CALL FOR PAPERS

Special Issue: Sustainable Infrastructure Management
Journal of Facilities Management
Further information at:
http://www.emeraldinsight.com/products/journals/call_for_papers.htm?id=4389
For further questions contact the Guest Editor, **Fuzhan Nasiri**, at f.nasiri@ucl.ac.uk
Abstract: Infrastructures are facilities and services that support the functioning of human societies. Examples are utility networks (such as water, wastewater, gas, electricity, and communications), transportation systems (such as airports, railroads, roads, and bridges), public buildings (municipal buildings and hospitals), and social venues (such as sports and entertainment facilities). Capital intensity, network complexity, and criticality of services provided are among the main attributes of infrastructure systems. Infrastructure management is emerging as a top global priority in the 21st century due to a growing stock of aged infrastructure facilities and an increasing demand for infrastructure services resulted from a highly urbanized population.
IMPORTANT DATES
The closing date for submissions is: **1st May 2013**

Final Call for Book Chapter:
Business Performance Management
Further information at
Abstract: International Conference on Business Performance Measurement and Management (ICBPMM) took place in Lima during September 11th to 13th, 2012. The book, entitled '*Business Performance Management*' is scheduled to be published in July 2013. However, the publication in this volume is not limited to the contributions presented in ICBPMM 2012. We would like to invite other scholars all around the globe to submit an extended abstract, followed by complete paper to be published in the above edited book.
Important Dates
Extended Abstract Submission: Immediate
Authors Notifications: As soon as possible
Full Papers Submission: 15 March 2013
Review Report: 1 April 2013
Final Paper Submission: 15 June 2013
Publication Date: July/August 2013

CALL FOR PAPERS/SPECIAL ISSUE : VeRoLog 2013
Abstract: The second meeting of the EURO Working Group on Vehicle Routing and Logistics Optimization (VeRoLog) will take place at the University of Southampton, UK, from 7–10 July 2013. Researchers, practitioners and students are welcome to participate and present their research. Abstracts can be submitted through the website
https://www.ocs.soton.ac.uk/index.php/verolog/verolog2013 either using the LaTeX or the Microsoft Word template (maximum length one page).
Important Dates:
Extended paper submission deadline: 11 March 2013
Notification of paper acceptance: 1 April 2013
Early registration deadline: 29 April 2013
Conference: 7-10 July 2013
Anyone wanting to organize a stream or a session should contact Tolga Bekta (t.bektas@soton.ac.uk).

Call for Papers:
Journal of Simulation Special Issue on Simulation for Sustainable Healthcare
http://www.palgrave-journals.com/jos/jos_cfp_sush.pdf
Abstract: The Journal of Simulation (JOS), an official journal of The UK Operational Research Society, aims to publish methodological and technological advances in the application of simulation modelling-related theory and practice. JOS publishes material in a wide range of domains, including manufacturing, service, defence and healthcare, as it seeks to interest and provoke discussion within the wider simulation community. JOS has recently been accepted by Thomson Reuters for indexing and inclusion in the Science Citation Index (SCI). JOS will publish a special issue on simulation for achieving sustainable development in healthcare.
The special issue editors invite contributions in conceptual, methodological and technical advances to modelling for sustainability in healthcare. Studies that have applied M&S for practical problem solving and have considered the TBL of sustainability are also welcome. The review process will be the same as that used by the journal. Topics suitable for this special issue include, but are not limited to, the following:

- Cross-domain review of literature pertaining to M&S for sustainability, with the objective of furthering sustainable healthcare simulation.
- Conceptual models and frameworks to guide the development of models for sustainable healthcare. Empirical validation of the same.
- Methodological aspects pertaining to modelling for sustainability, for example, the use of hybrid simulation models that incorporate both productivity and sustainability–related criterion.
- Studies that report on the application of simulation for sustainable dementia care, sustainable care for the elderly, among others.
- Sustainable healthcare supply chains.
- Studies that increase awareness of sustainable healthcare through use of Serious Games in a teaching environment.

Important Dates:
Submission deadline: 1 July, 2013
Publish the special issue : 2014

Professional development opportunities for 2013

Approved courses in O.R. and Analytics

INTRODUCTION TO O.R. I

15-19 April, Birmingham
£2,850 + VAT for OR Society members
Hands on course

Course provider:
Frances O'Brien, Stewart Robinson et al

Understand the role of Operational Research in management; understand the requirements for successful Operational Research interventions; have knowledge of a range of Operational Research techniques; be able to identify the suitability of a technique for a problem situation and be able to apply those techniques.

O.R. and the O.R. process; Statistical methods in O.R.: sampling and regression; Simulation; Optimisation and (Meta-) heuristics; Statistical methods in O.R.: forecasting

MAKING CONVERSATIONS MORE EFFECTIVE

23 April, Birmingham
£490 + VAT for OR Society members

Course provider:
Independent Consultant

Begin to understand how better conversations can transform your actions, performance and leadership skills. By recognising the hidden power of one of the most common skills – conversation – and understanding what's really going on you can improve your own ability to make conversations more productive.

Learn how to stop taking conversations for granted, change your attitude to listening and make conversations more effective. Review some models of conversation and dialogue. Make a significant change in the value of your own one-to-one and group conversations

COMMUNICATING STRATEGICALLY TO INFLUENCE PEOPLE

24 April, Birmingham
£625 + VAT for OR Society members
Hands on course

Course provider:
The Strategy Studio

See article on page 06

Find out about the latest developments in drama theory (an extension of game theory that acknowledges the importance of emotion as well as rational thought) and how they can help you to make sense of, and better manage, your own or your organisation's relationships with others.

Understand how, and how easily, collaboration can morph into conflict and vice versa – and what to do about it! 'Read' other people better and work on some of the current challenges facing you and your organisation and to work towards solutions. Appreciate what it is that influential people do when they interact with others – and see how you can do this too!

STAKEHOLDERS ENGAGEMENT

25-26 April, Birmingham
£1,100 + VAT for OR Society members
Hands on course

Course provider:
Hickling & Muller Interactive Process

Gain an understanding of the underlying principles of interactive working, why we work the way we do and when interactive working is appropriate. Appreciate the concept of a 'spectrum of participation' and how to define the degree of influence stakeholders have in the process. Use a toolbox of design tools.

Learn how to apply the underlying principles and practical tools which are widely used in the field of stakeholder engagement; Find out how to avoid and reduce conflict and improve engagement with clients, build dialogue, consensus, collaboration and partnership Benefit from practical training and hands-on experience in the design and management of all kinds of interactive processes

HOW TO DYNAMICALLY DESIGN SUPPLY CHAINS

30 April - 1 May, Birmingham
£1,030 + VAT for OR Society members;
Hands on course

Course provider:
Stephen Disney

The bullwhip effect is pervasive in industry and reduces factory profits by up to 30%. This can be eliminated by careful design of forecasting and replenishment rules. In global supply chains with long lead-times the bullwhip problem is a bigger problem still. Supply chains can be designed to balance the inventory / capacity / service trade-off.

Learn about the impact of the bullwhip effect on financial performance; Get to know how the 'Order Up To' policy generates bullwhip and how it can be re-designed so as to avoid bullwhip; Understand how to forecast demand for managing inventory and bullwhip, how to set capacity levels to minimise the costs involved in meeting a variable demand pattern and set safety stock levels to minimise costs and meet target service levels.

COMING IN MAY!

DESIGNING PERFORMANCE MEASUREMENT SYSTEMS USING ANALYTICS – 8 May
INTRODUCTION TO SYSTEM DYNAMICS AND STRATEGIC MODELLING – 14-15 May
PERFORMANCE MANAGEMENT WITH DEA – 21 May
DECISION AND RISK ANALYSIS – 29 May

To book online, visit www.theorsociety.com or call Jennie Phelps on 0121 234 7818

REGIONAL SOCIETIES

EAST MIDLANDS (EMORG)

CONTACT: Chris Smith

TEL: 01530 416426

EMAIL: chrissmith677@gmail.com

EMORG - Networking & Project Showcase Evening
Date/Time: Wednesday, 01 May 2013 at 5pm
Venue: Loughborough University

Abstract: You may have read in the March Inside O.R. Society magazine that the East Midlands O.R. Group are organising a Networking & Project Showcase Evening for all its members on Wednesday 1st May 2013 at Loughborough University. We would like as many members as possible to come along. The event will be based around poster project presentations, where students and researchers in our region are invited to showcase their projects in Operational Research and Analytics techniques, but there will also be the opportunity to network and chat with other attendees, both practitioners and academics. The main objective of this event is for us to meet one another and celebrate all the great O.R. work that is going on in our region. It will be an informal evening, open to members and non-members of the OR society.

We are currently looking for volunteers, this could be students and /or researchers from our region working on Operational Research/Analytics type projects, (even if they call them something else), who will produce a poster on their work and share their research with the attendees. A winner and runner up will be chosen and a small prize & certificate will be given.

Would you consider showcasing your O.R./Analytics work in this event or do you know someone who might be suitable to do so? We need to decide the latest by the 20th of March, whether to go ahead or not with this event so please take action now and get in touch with us (you can find our contact details below) or help us to spread the word about this event. If you do not think you qualify to give a poster presentation, why not come along to attend the event? So, put the date in your diary now and come along on the 1st of May at Loughborough University. We expect the event to start around 5.30-6pm.

We look forward to hearing from you.
Gillian and Antuela
Gillian Groom Email: g.groom@soton.ac.uk
Dr. Antuela Tako AORS E Mail: a.takou@lboro.ac.uk

LONDON & SOUTH EAST (LASE OR S)

CONTACT:

Sandra Weddell

TEL: 020 7918 4591,

EMAIL: Sandra.Weddell@tube.tfl.gov.uk

or Martin Caunt

TEL: 020 7215 3317,

EMAIL: Martin.Caunt@dti.gsi.gov.uk

MIDLAND (MORS)

CONTACT: Jen East (Secretary)

EMAIL: MidlandsORSociety@live.co.uk

MORS - Will the wind be blowing when we really need it - quantifying wind generation's contribution to supporting electricity demand?
Date/Time: Tuesday, 16 April 2013 at 18.30
Venue: The Club Room, The Old Joint Stock, 4 Temple Row West, Birmingham, B2 5NY
Speaker: Dr. Chris Dent, Durham University

Non-members welcome, no charge is made. After the talk, you are welcome to join us and the speaker for a meal. For further information please contact MidlandsORSociety@live.co.uk
Abstract: Whether or not installed generation capacity is adequate to support peak demand is a key question, not just in power systems planning but also in public energy policy. As wind generation will form a key part of our future energy mix in GB and many other power systems, its contribution to adequacy is of great current interest. This presentation will address how wind's contribution is typically quantified, issues of limited historic data and how these may be mitigated, what insights are available from meteorology, and whether the question posed in the title is the right question to be asking anyway.

MORS - Florence Nightingale: using graphical statistical analysis to combat the spread of disease
Date/Time: Tuesday, 12 November 2013 at 18.00
Venue: The Club Room, The Old Joint Stock, 4 Temple Row West, Birmingham, B2 5NY
Speaker: Noel-Ann Bradshaw, University of Greenwich

Non-members welcome, no charge is made. After the talk, you are welcome to join us and the speaker for a meal. For further information please contact MidlandsORSociety@live.co.uk
Abstract:
Florence Nightingale (from Lea, Derbyshire) is well known in mathematical and statistical circles for her graphical representations of data. But what exactly did these diagrams show and what other diagrams and statistical methods were being used at the time to analyse data? This talk will look in detail at Nightingale's graphical representation of the causes of mortality during the Crimean War. It will demonstrate how these were used by Nightingale and others to show that preventable diseases contributed to the army's high mortality rate and how the use of this data led to dramatic changes to nursing practices in Army hospitals.

NORTH WEST (NWORG)

CONTACT: Nathan Proudlove
EMAIL: nathan.proudlove@mbs.ac.uk

SCOTLAND (ORGS)

CONTACT: Kerem Akartunali (Chair)
EMAIL: Kerem.Akartunali@Strath.ac.uk
CONTACT: Roberto Rossi (Secretary)
EMAIL: roberto.rossi@ed.ac.uk

SOUTHERN OR GROUP (SORG)

CONTACT: Patrick Beullens
TEL: 023 9284 6357
EMAIL: p.beullens@soton.ac.uk

SOUTH WALES (SWORDS)

CONTACT: Dr Jonathan Thompson.
TEL: 029 2087 5524 Fax: 029 2087 4199
EMAIL: ThompsonJMI@cardiff.ac.uk

WESTERN (WORDS)

CONTACT: Dr Jo Smedley
TEL: 01633 432573
EMAIL: jo.smedley@newport.ac.uk

YORKSHIRE & HUMBERSIDE (YHORG)

CONTACT: Stuart Johns.
TEL: (0114) 225 3136
EMAIL: s.l.johns@shu.ac.uk

YHORG : The NHS Commissioning Board
Date/Time: Thursday 25 April 2013 6-8pm refreshments from 5.30pm
Venue: West Yorkshire Playhouse Priestley room
Speaker: Various see below
Abstract: The NHS Commissioning Board (NHS CB) will take up its full statutory duties and responsibilities on 1 April 2013 with a key role in delivering a modernised health service and securing the best possible health outcomes for patients. It will do this by putting patients and the public at the heart of everything it does, and empowering and supporting clinical leaders.
Speakers:
Stephen Lorrimer - Operational Research Head of Profession at the new Commissioning Board
The Department of Health has a long standing O.R. community. This talk will discuss how we expect O.R. to have continuing impact in the future through DH and its new Arm's Length Bodies, such as the NHS Commissioning Board.
David Gilding - Head of Public Health Intelligence at Nottinghamshire County
Following his successful talk at the East Midlands O.R. Group, David has agreed to speak at the Y&H O.R. Group meeting

With over £8 billion spent on the NHS in the East Midlands each year the processes to decide the best way to spend this money would seem to be fertile ground for O.R., yet the application of formal modelling, simulation and other O.R. techniques in local NHS commissioning is extremely rare. In this talk, David describes recent projects in which NHS Nottinghamshire County has started to use O.R. methods and reflects on the added value that has resulted.

Could anyone wanting to attend email me at janeparkinch@gmail.com
*Parking is available adjacent to the venue, which is about a 15-20 walk from the main Leeds station.
Full directions can be found at http://wyp.org.uk/visiting/finding-us/directions-and-address/

<OR>

SPECIAL INTEREST GROUPS

ANALYTICS NETWORK (ANSIG)

CONTACT John Hopes
EMAIL: ANChair@theorsociety.com
ANSIG NEXT MEETING: Adding Value In Analytics

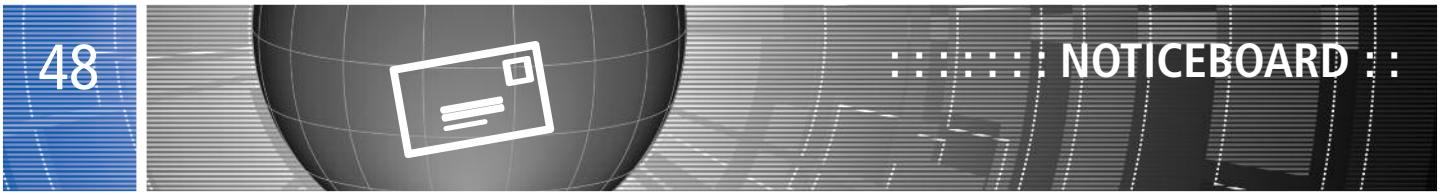
Date/Time: Wednesday, 12 June 2013 9am – 17.30pm (Buffett lunch and refreshments provided)
Venue: Institution of Engineering & Technology, Savoy Place, London, WC2R 0BL
Speaker: TBA

Abstract: Experience shows that the most successful businesses are those with the clearest picture of what they are doing, and what they need to change or do better.

The vast amounts of data now gathered by organisations, together with the computing power that's available to analyse it, has led to a revolution that's transforming business decision making: Advanced Analytics. Our one-day seminar examines developments in the field of Advanced Analytics – the latest ways of gaining business insight through quantitative analysis to aid the decision-making process.

Further information on this event, including speakers, programme and booking will follow shortly.

To book on event go to:
https://www.theorsociety.com/Pages/SpecialInterest/AnalyticsNetwork_future.aspx



COMMUNITY OR NETWORK

CONTACT Leroy White
EMAIL: leroy.white@bristol.ac.uk
TEL: 0117 954 5683

COMPLEX SYSTEMS DISCUSSION GROUP

CONTACT: Kevin Gilligan
TEL: 0208 977 8553
EMAIL: GilliganMauve@geo2.Poptel.org.uk
Group meetings to be held at 12 Noon
Last Friday of the month
The Adelaide, Park Road, Teddington
Meeting Title : The Management of Uncertainty

CRIMINAL JUSTICE

CONTACT: Ian Newsome
TEL. DDI: 01924 292244 **Extension:** 22244
EMAIL: ian.newsome@westyorkshire.pnn.police.uk

CJSIG NEXT MEETING:
Criminal Justice Special Interest Group Meeting

Date/Time: Monday, 24 June 2013 at 13:30 - 17:00

Venue: Home Office, Westminster

Speaker: Various see below.

Abstract: The programme is being finalised but is likely to include talks from the Ministry of Justice on a topic tbc; Leeds University on analysis/prediction of burglaries and agent based modelling; Cogentus consultants on a US study involving a community based policing system plus an interesting methodology for measuring effectiveness; and ORH consultants on a Canadian location analysis study. (With many thanks to those of you who have kindly volunteered to speak this time).

The event will be at the Home Office in London, location to be confirmed, from 1.30pm to 5pm. As usual, please bring your own refreshments.

Please notify Sue Merchant as soon as possible if you would like to attend as space is likely to be limited. suemerchant@hotmail.com

DECISION ANALYSIS

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DEFENCE

CONTACT: Noel Corrigan
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ACTING CHAIR:
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Chief Scientist
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Defence Science and Technology Laboratory (Dstl)
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Hampshire, PO17 6AD
TEL: 02392 53 2839
EMAIL: arobinson@dstl.gov.uk

Defence Special Interest Group

Date/Time: Wednesday 10 April 2013, 1000 – 1600

Venue: Park Centre, Farnborough Aerospace Centre, Farnborough, Hants

Speaker: Jonathan Batson, IBM; Tom McCutcheon Dstl
Our next event will be a full day workshop with a limited group of selected participants. The theme is the role of Analytics in Defence Analysis. The aim of the debate is to identify what more the defence analysis community should be doing.to fully exploit the opportunities (if any) provided by the different categories of analytics: Descriptive, Predictive, Prescriptive. A full agenda for the day will be issued closer to the day, but will include a number of syndicate sessions to discuss specific aspects of the issue. These sessions will be fuelled by the information provided by the speakers in their opening keynote remarks.

Spaces are strictly limited: if you would like to attend please contact Noel Corrigan by Mar 27th. (noel.corrigan@corda.co.uk)

FINANCIAL SERVICES

CONTACT: Peter Cohen.
TEL 0207 512 7074.
EMAIL: pcohen@ecgd.gsi.gov.uk

FORECASTING

CONTACT: James Taylor
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HEALTH & SOCIAL SERVICES

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SUPPORTED BY: Colin Elwood
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: : NOTICEBOARD : : : : : : :

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MATHEMATICAL PROGRAMMING

CONTACT: Katarina Papadaki, London School of Economics
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O.R. AND STRATEGY

CONTACT: Frances O'Brien
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O.R. FOR DEVELOPING COUNTRIES

CONTACT: Eric Soubeiga
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eric.soubeiga@orpagroup.net

PROBLEM STRUCTURING METHODS

CONTACT: Giles Hindle (Chair)
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EMAIL: giles.hindle@hull.ac.uk
or **CONTACT:** Dr. L Alberto Franco, University of Warwick
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EMAIL: alberto.franco@wbs.ac.uk

PRODUCTIVITY MEASUREMENT

CONTACT: Ozren Despic
EMAIL: o.despic@aston.ac.uk

SD+ (SYSTEM DYNAMICS)

CONTACT: David Lane (Chair)
TEL: 0207 955 7336
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or **CONTACT**: Sally Brailsford (Secretary)
TEL: 023 8059 3567
EMAIL: s.c.brailsford@soton.ac.uk

SIMULATION

CONTACT: Christine Currie
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FAX: 0238 059 5147
EMAIL: christine.currie@soton.ac.uk
or **CONTACT**: Katy Hoad
EMAIL: Kathryn.hoad@wbs.ac.uk

THIRD SECTOR O.R.

CONTACT: Katherine Byrne
EMAIL: katherine.byrne@voa.gsi.gov.uk
Third Sector OR Committee
Date/Time: 27th March 2013, 4 - 6pm
Venue: London School of Economics
Speaker: Various See below

The next Third Sector special interest group meeting will focus on Third Sector O.R. in developing countries. We will be exploring how O.R. analysts can contribute to this distinct part of the Third Sector, via O.R. work done either from the UK or on-site in developing countries. Andrew Dobson will explore the role of O.R. analysts and Anthony Harries will talk about building O.R. capacity in low and middle income countries. We will also hear case studies from Ivor Langley, Honora Smith and Paul Randall, covering O.R. methods ranging from optimisation to evaluation and applications in the health sector and non-governmental organisations.

- Third Sector O.R. and developing countries: Some possibilities: **Andrew Dobson**
- Evaluation of Tuberculosis diagnostics in Tanzania: **Ivor Langley, Liverpool School of Tropical Medicine**
- Locating laboratories for HIV/AIDS testing in South Africa: **Honora Smith, University of Southampton**
- Working with NGOs in Namibia: **Paul Randall**
- Capacity building for operational research in low and middle income countries: **Anthony Harries, International Union Against Tuberculosis and Lung Disease**

Entry to this event is free but advance registration is essential. To book your place for this meeting, please email Katherine.Byrne@voa.gsi.gov.uk by 20th March

OR-30

John Crocker

April 1983

In January we took a quick look at Harold Larnder who died in 1981, in February it was Sir Owen Wansbrough-Jones and now, in April we turn to Keith D 'Toch' Tocher who died suddenly on 30th December 1981 at the age of 60. B.H.P. (Patrick) Rivett, who I believe was Professor of Operational Research, University of Sussex at the time, produced at full and detailed appreciation of this great man and I thoroughly recommend it to anyone with an interest in the history of O.R. in general and of simulation, in particular. More recently, *JOS* (Volume 2 Issue 3 (November 2008)) carried a special section on KD Tocher including one of his own papers from 1959).

I had the great privilege to meet Toch in 1968 or 1969. At the time he was based at Cybor House, the head office of the Operational Research Department of the British Steel Corporation in Sheffield just a few hundred yards from the University where I was studying mathematics. The Maths Society (SUMS) had invited him to give a talk one evening. This was a fascinating insight into simulation starting with the pre-computer days using ten-sided dice to generate random numbers and a curious mixture of hydro-mechanics to study the flow of materials through various processes along with record cards to record where everything was at any moment in time. His talk culminated in a description of what has become almost synonymous with his name, the ABC of simulation which formed the basis of the first purpose built computer language (General Simulation Program – GSP) that he developed in the late 1950's and early 60's. The one thing I remember from his talk was that although simulation was an excellent method, it would, he believed be replaced by analytical methods within 5 years. My love at that time was in pure mathematics, particularly abstract algebra, and I vowed at the time that I would never have anything to do with either simulation or computing. (One of my first projects on joining BSC involved a simulation model of the 'Anchor Project' which was written in GSP and run remotely on the Elliot 503 in Cybor House.)

Regular readers of *Inside O.R.* will recall an article in January on Stewart Robinson's inaugural lecture on taking up a chair at Loughborough. 'Better than Survival: The Need for Research to Strengthen Planning in Industry and the Public Service' was the title of Rolfe Tomlinson's inaugural lecture as Professor of Systems and Operational Research at the University of Warwick. 'I believe that the University has as much to offer through research in improving the process of organisation and decision-making as it has in research to improve the technical processes of industry.' 'The best survivors are those who believe in, and work for, a future.' Rolfe was President of the OR Society 1974-5, a Companion in 1990 and Beale Medal winner in 2005.

Rivett, B.H.P., (1983), Professor K.D. Tocher: A Personal Appreciation, *JORS* **34**.4, Pp 265-270, (jors198365a.pdf)

Tomlinson, R.C. , (1983), Better than Survival: The Need for Research to Strengthen Planning in Industry and the Public Service, *JORS* **34**.4, Pp 271-279, (jors198366a.pdf)

<OR>

OR-20 Extracted from OR Newsletter April 1993

NEWS

The winder of O.R.?

Diagnosing the Woolworth syndrome using the Dillons dipstick

An article in the February issue of O.R. Newsletter ('Does O.R. suffer from the 'Woolworth syndrome'?' asked if O.R. lost out from not having (or perhaps having lost) an image that made sense to clients in terms of the categories and vocabulary they already use in thinking about the world. One diagnostic instrument for the 'Woolworth syndrome 'might be the 'Dillon's dipstick'. For in the main London branch of the bookshop many of the subjects that inform the tasks of management – accountancy, business studies, economics, law, psychology, and statistics- have books by the row, wall or even roomful. Operational Research on the other hand is accorded just a few feet of shelf space tucked away in the corner and even that is located in the computing section! The 'Bookshop test' may not be the ultimate benchmark, but we do seem to have an image problem and it does seem to have a something to do with classification.

Misclassification

As practitioners our goals are better to help management make better decisions, take surer actions and improve organisational performance. We are more than willing to tackle problems involving uncertainty, complexity and change. We are skilled in systematic and rigorous analysis and modelling – qualitative as well as quantitative. What then are the categorisation problems which may be inhibiting effective O.R. practice? Some mis-classifications from which O.R. suffers (no claim to originality is made here, see for example the works of Ackoff, Drucker or Eilon) seem to be:

- The equation of the operational with the tactical
- The equation of research with impractical
- The equation of the tools of O.R. (especially mathematics and computing) with O.R. itself

Client's perceptions

It should be immediately made clear that these are perceptions of some of our clients, especially those who are as yet only potential clients, and not necessarily accurate reflections of actual practice. But perceptions are a part of reality, and are to be taken seriously. What then to do?

If O.R. is concerned with practical analytical approaches to tackling some of the key problems- at all levels – of management, then it is with these problems, not with the tools that may be deployed in tackling them, that it should be primarily be, and be seen to be, dealing. Thus for instance, while we will of course continue to use tools like linear programming (well some of us will) and to tackle problems like inventory control, it is with the problems of general management that surely we should most engage. This seems to be

the first target area for some reclassification. For instance a classification of our work in line with a 'general problem cycle' of the sort that is familiar to managers – for example:

- scanning for emergency issues
- formulating and diagnosing problems
- setting goals and objectives
- designing and developing options
- appraising options and making choices
- gaining acceptance for and implementing solutions
- monitoring and controlling implementation
- evaluating results

seems to give a more marketable agenda for O.R. than one based on tools of the trade or narrowly technical problems.

The above concentrates on making sure that we have, and are seen to have, a desirable and relevant 'product' (to use a marketing prospective, as in Paul Thornton's presidential address). In time that should help promote a helpful image; the meaning of any word or phrase can change with use and 'O.R.' should be no exception. But this could take some time; is there more that could be done to help?

The label on the tin

Well, if the product and its promotion are being attended to, what about the packaging? Here the 'label on the tin' must surely be a key factor. In O.R. we already get along with two or three more or less alternative names – management science, operational analysis and decision science. Practitioners often use whichever name they find most helpful in their situation (as I recall, more members of the Professors of O.R. Committee have Management Science in their title than have O.R.!). Can we add to this list a name that means more to our clients, and that would conjure up in their minds a more helpful image? This issue has been considered before of course, but probably needs frequent re-visitation!

Out of tune

A name that includes the term 'research' or even 'science' (quite apart from the debate over whether O.R. is a science or a technology) all too often seems to generate an image amongst clients that is out of tune with the practical 'real world' orientation of the O.R. / MS practitioner. Similarly the word 'operational', however well founded in terms of the historical origins of O.R., is too often taken by clients to mean a limitation to the tactical and exclusion from the strategic. One term that is common use, by the media among others, and that seems to strike the right kind of chords with clients, is 'analyst'. Of course it is far from perfect. A practitioner would point to the elements of synthesis – and even catalysis – in O.R./ MS. But would a management analyst feel any more reluctant to propose 'treatment' as well as to offer 'diagnosis' to her clients than would a psychoanalyst to his? Surely not. And a solution using some term such as management engineer (or management chemist!) seems worse than the problem.

What sort of analysis?

But what sort of analyst? 'Systems' could have considerable attractions, but the terms 'systems analysis' has been cornered – a source of enough confusion already (guess where Checkland's book on systems thinking is situated in Dillon's). 'Business' or 'Financial' might be all right in some spheres, but not the majority. Those working in particular sectors might use the sector name as a prefix e.g. 'environmental analyst'. But something more general is needed. What better than the word 'general' itself? A 'general analyst' sobriquet could offer:

- links to the rise of general management i.e. strategic as well as tactical concerns
- analogy with the General Practitioner in medicine, i.e. a holistic, systemic approach
- association with the role of generalists, i.e. a focus on broad problems rather than narrow techniques.

Need for GP's and specialists

A 'general analyst' would of course need to show that she had depth as well as breadth, in particular a solid knowledge of the business – financial, industrial, government or whatever – her client was in. Even then, one criticism might be that, by definition a 'general analyst' would know less about individual relevant disciplines (and so why employ the general analyst?) Well. We should be modest enough to admit that we don't know everything! But just as in the medical world there is a need for GP's as well as specialists in particular conditions; so in the management world there is a need for analytical people who will offer a 'whole problem' perspective. We might even say that, in the case of O.R. , we have the beginnings of a conceptual underpinning for this – systems science – that the GP's lacks. And while we might not be able to quite provide 'cradle to grave' care, O.R. practitioners as general analysts can certainly offer a 'formulation to evaluation' service. 'General Analyst' also perhaps has the advantage of not being too tight a definition, something which any complex activity needs to avoid, yet at the same time emphasising one aspect – the holistic approach to problems – that is a key part to our claim to distinction. Never mind the 'Wonder of Woolies', its time to help our clients to stop wondering about what we are and encourage then instead to wonder at what we can do …

By Geoff Royston

<OR>

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For an informal discussion in total confidence on any of these positions or the market in general, please contact: Mark Chapman, Teresa Cheeseman, Kate Fuller or Sarah Sambrook. Alternatively visit our website to view our current vacancies.

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