**ABSTRACTS FOR 26 OCTOBER SESSION OF EURO CONFERENCE ON CHALLENGES IN THE DEPLOYMENT OF OR PROJECTS**

**MONDAY OCT 26th 3pm UK time (4pm CET)**

**3pm – 3.30pm From snow ploughs to child obesity – Overcoming challenges in the deployment of OR projects in the public sector**

Max Moullin

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This paper will discuss challenges in the deployment of a number of OR projects over the years – from snow ploughs to child obesity. The projects described all had deployment difficulties. However in many cases these were anticipated in advance with good results.

The author’s approach to OR was heavily influenced by senior practitioners in his first two projects where in particular he learnt about the importance of involving staff and other key stakeholders. The first was an 18 month project advising on snow clearance on English motorways. This included monthly meetings with the relevant director and his staff including a former snow plough operator. This meant that the assumptions and analysis were agreed as they went along and implementation of the project’s conclusions proved much easier. The second project on comparison of treatments for acute myeloid leukemia was based on regular contact with clinicians at all levels, including writing joint research papers. This project was later described as having led to ‘a major breakthrough in the treatment of AML’.

When the author moved to British Coal, the involvement of staff at all levels proved crucial both to the wide deployment of a colliery production planning system and to a marketing model for use with clients that was featured on BBC television. However it was only after moving to Sheffield Business School, who received sponsorship from the UK OR Society for the Community OR Unit, that he learnt from a number of OR experts about the importance of involving service users. Not only were patients and service users often the best source of information on how a service works in practice, involving and empowering them within the project led to more successful implementation. He also learnt first hand about the usefulness of ‘soft’ OR facilitation methodologies.

This experience helped greatly when developing the methodology of the Public Sector Scorecard (PSS). So when the author used the PSS to help improve Sheffield’s Stop Smoking Service, he began with three interactive workshops attended by over 100 service users and then worked with a reference group including senior managers, staff, service users and other key stakeholders. This involvement was crucial to the success of the project where the number of people stopping smoking doubled and has stayed at that level ever since. A similar approach was used in a city-wide project aimed at reducing child obesity. However this only proved to be successful once the project team took explicit account of behavioural aspects by integrating the PSS with the Theory of Planned Behaviour.

Also, arguably, one of the reasons why otherwise excellent OR projects are not deployed successfully is that they often take strategy as given. However unless that strategy is understood and agreed widely within the organization, the project sponsor is likely to find implementation of OR’s findings difficult. One way to avoid this is to help the organization develop and articulate its strategy before identifying the best way forward. Finally, it is important that the organization has the right performance measures in place, as otherwise a good OR solution may appear not to perform so well.

The paper concludes that many problems arise because of practitioners’ implicit definition of what makes a good OR project. Rather than trying to come up with the best solution to a problem, they should frame the issue as how they can assist the client in implementing successful change. This may include the involvement of staff, service users and other stakeholders; using a combination of hard and soft OR methods; making use of Behavioural OR where appropriate; and if possible trying to get involved in strategy and performance measurement as well as service improvement.

Biography

Max Moullin worked in OR in central government (Health, Environment and Transport) and in British Coal for over ten years before becoming a principal lecturer at Sheffield Business School. He is author of the book Delivering Excellence in Health and Social Care and a Fellow of the Operational Research Society and the Chartered Quality Institute. In 2001 he developed the Public Sector Scorecard which has been used in Canada, Chile and South Africa as well as in Europe. He is currently director of the Public Sector Scorecard Research Centre. He is an experienced plenary speaker and workshop facilitator.

**3.30pm – 4pm Analytical projects at Lucile Packard Children’s Hos- pital Stanford: Successes, failures, and opportunities**

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Improving healthcare value by improving quality and reducing cost is a priority for all health systems. Numerous technical proof-of-concept projects in the use of optimization, machine learning, and other analytical methods to solve clinical and operational problems in hospitals and other healthcare settings have been published but relatively few have been shown to provide sustained value. A question of central importance for operations researchers is how to develop tools that will be successfully implemented and that will lead to sustained, measured value – that is, reduce the cost or improve the quality of care on a sustained basis. For a project to provide sustained value it must succeed in each of four successive stages: stakeholder engagement, technical performance, implementation, and sustained use (with measurable impact).

We describe recent work on a variety of analytical projects that we have carried out at Lucile Packard Children’s Hospital Stanford (LPCH) with a focus on key reasons why projects failed or succeeded at each stage. Our work at LPCH aims to facilitate the delivery of cutting-edge advances in medical care through advances in hospital operations. To achieve this goal we are applying a range of analytical techniques including machine learning, mathematical optimization, simulation, and a variety of statistical, probabilistic, and computational tools. Our projects target various parts of the care process including telemedicine and patient access; procedures and diagnostics; the intensive care and acute care units; and discharge.

Our projects have achieved varying degrees of success to date. We discuss factors leading to project success or failure, focusing on the extent to which projects have succeeded in engaging stakeholders, in solving the technical problem, in implementation, and in sustained use. For the latter three stages we describe a project that failed at that stage, the changes we made to address the failure, and one or two projects that were successful.

We conclude with discussion of lessons learned and we present principles and best practices for the design of analytical projects intended for implementation in healthcare settings.

Empirical evidence suggests that, to date, analytics-based system design has failed to provide the full benefits that could be achieved in hospitals and other healthcare settings. Operations researchers must use the lessons of these failures, including many of our own, to inform the design, implementation, and evaluation of their analytical solutions.

**Biography**

Margaret L. Brandeau is the Coleman F Fung Professor in the School of Engineering and Professor of Medicine (by Courtesy) at Stanford University. Her research focuses on the development of applied mathematical and economic models to support decisions in health policy and healthcare operations management.

David Scheinker is Director of Systems Design and Collaborative Research at Lucile Packard Children’s Hospital Stanford, and Associate Clinical Professor of Pediatric Endocrinology and Adjunct Professor of Management Science and Engineering at Stanford University. He leads an initiative, Systems Utilization Research for Stanford Medicine, that aims to facilitate the delivery of cutting-edge advances in medical care through advances in hospital operations.