

ian halliday **view from the top**

STFC review fails at its core

Since its inception, the Science and Technology Facilities Council has had an extremely difficult time. It has had particular trouble with the reception of its decisions by the research community, with the review of 2007 science budget allocations by the Commons Innovation, Universities, Science and Skills committee and with its Investor in People accreditation process.

These difficult times for the STFC have been driven, in part, by the damage to university physics departments caused by large unpredicted variations in university funding and rapid strategic about turns, sometimes through a full 360 degrees.

As a result, in June last year, the Department for Innovation, Universities and Skills, via Research Councils UK, commissioned a two-stage organisational review of the council. The review consisted of a self-assessment by the council, published two months later in August 2008, followed by an independent scrutiny of the operation and structure of the STFC, which was published in late December (*see Editorial, page 2, News p4*).

Let us take a step back in time for a moment. In the past 15 years, there have been three reorganisations of the UK science areas involving large facilities. The Particle Physics and Astronomy Research Council and the Council for the Central Laboratory of the Research Councils were formed in 1994 and 1995 respectively; then there were major quinquennial review changes in 2002; and, finally, the STFC formed from the merger of PPARC and CCLRC in 2007, and an organisational review followed immediately.

What was the problem that caused this seriously damaging and expensive process? Do other countries suffer from the same problem? Can an STFC organisational review provide a solution or are the problems too deeply entrenched? Does the STFC even acknowledge these issues?

The recurrent problem in the UK is how to deal with large facilities. There are two functional models. The first, effectively tested in Germany and the United States, is to have an organisation empowered to run such current, large-scale facilities. These are the Helmholtz organisation in Germany and the Department of Energy in the US. In Germany, however, the decisions about new facilities were passed to a separate body, effectively the Wissenschaftsrat (the German Council of Science and Humanities), which advises the government. In the US, the pressure is to retain decision making about facilities within the DoE but pass employment responsibility

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and risk-ownership to university organisations, such as Stanford or the University Research Alliance. Why is there this complexity?

The problem, replicated in the UK, is the tension within an organisation responsible both for funding decisions about facilities and universities, and also simultaneously responsible for making a success of owning such facilities. There is an instant conflict of interest. Is the CEO responsible for making correct decisions across the science or for having successful facilities? One definitely, and counterintuitively, does not imply the other. Is the CEO a salesman for his facilities? If not, he loses the support of his staff. If he is a salesman, he is seen as biased by the research community. The separation of these conflicts drives the Helmholtz and DoE processes.

A second difficulty is how to balance the funding of small-scale science with investment in large-scale facilities. This balance is crucial for the success of all areas of modern science. Indeed, the real challenge is to cope with the funding of all scales of infrastructure. In the German and American models, where different agencies support different ends of the funding scales, this balance is difficult and controversial.

The second, PPARC-like model is a council manifestly made responsible for all finance scales, with facilities at arms length either as international organisations or as almost independent structures, such as the UK Astronomy Technology Centre and the Rutherford Appleton Laboratory. The advantage, over the DoE/Helmholtz model, is in keeping funding responsibility within PPARC.

This structure gave the UK clear competitive advantage in particle physics and astronomy. The RAL, as a lab, could apply to PPARC for support for space missions, accelerator R&D in particle physics, and astronomy. When it came to resources for large-scale infrastructures for medicine, solid-state physics or materials research, however, the appropriate research councils did not accept responsibility. As a result, special processes had to be invoked and the balance between small and large-scale funding was not systematically and openly discussed.

For instance, the decision to build the Diamond synchrotron was taken very late and was, at crucial points, driven by the Wellcome Trust. The Engineering and Physical Sciences Research Council introduced the infamous 'ticket system' for allocating

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time on a facility. This meant under-utilisation of facilities. Again, the decision path should have been: 1. "Do we need the facility?"; 2. "Can we afford it?"; 3. "Run it into the ground to maximise the science!"

The absence of such discussion and engagement also probably caused the emergency multi-billion infrastructure funding for universities in 1998. These are the dynamics that led to CCLRC being set up as an independent council.

The current STFC is an odd and probably unstable mixture of these models. It has total responsibility for particle physics and astronomy. But it has only big facility responsibility in the areas of biology and materials. Unlike PPARC, it now owns the large RAL but has funding responsibility for only the part of the science remit involving facilities.

Does the organisational review give one confidence that such tensions will be addressed? Will the UK taxpayer get maximal science or will the ownership pressures bias the system? Does RAL have greater access to decision making than universities because of its scale and local presence? This particular question must be looked at in the context of the many German or DoE labs in competition with each other and with university labs.

The examples in the STFC's self-assessment do not engender confidence. Several already show internal bias without open competition; for instance the STFC's Hartree Centre at Daresbury did not compete with the Edinburgh Parallel Computing Centre, for example, for its funding.

The language of the assessment is also magnificently ambiguous about the core role of the STFC. Is the council to deliver the most science for the UK by whatever means? How does it propose to engage the small versus large facilities debate in biology, materials, and so on? How does STFC engage with the other relevant councils?

Above all, the STFC's self-assessment does not specifically address the central issues that have led to the multiple re-organisations of the past 15 years. Here, I agree with the observations of the independent panel that the self-assessment is written at too high a level, and lacks any real feel for either the problems or the proposed solutions.

I remain extremely worried that since the destructive tensions of the past 15 years have not been explicitly addressed, debated and resolved, with the agreement of the appropriate players, we will soon have yet another restructuring or funding crisis. The problem is not one to be solved merely by an improved communication strategy but requires real and explicit clarity about actual decision paths and explicit ownership of processes and decisions by the STFC Council.

More to say? Email comment @ResearchResearch.com

Will the UK taxpayer get maximal science or will the ownership pressures bias the system?

RAE 2008: pauses for thought

As institutions began to digest their research assessment results last month, we asked a diverse range of commentators for their first thoughts on the last RAE. Here are some snippets from our open blog, Exquisite Life.

The long and winding road, Ed Hughes

It was with a certain amount of trepidation that I entered HEFCE's offices in August 2004 to take up the role of RAE manager. After all, having worked in three HEIs and seen the RAE 2001 from the perspective of an institutional research manager, it seemed that, at best, this would be a thankless task or, at worst, a poisoned chalice. As the results of RAE 2008 are announced, four years on, I'm happy to admit that I was mistaken. *For more, go to <http://tinyurl.com/9c9523>*

Three cheers for engineering, Bill Wakeham

As a vice-chancellor who is also an engineer, it is a real pleasure to note the overall performance recorded by the academic staff in UK engineering within RAE 2008...It is especially noteworthy that there are some eight institutions with the equivalent of around 100 or more academic staff whose work is internationally excellent or world leading. *For more, go to <http://tinyurl.com/9mlaaw>*

Today marks the passing of the old ways, Nick Petford

Initial indicators are that Bournemouth University has done well in the 2008 RAE, albeit from a relatively low base in 2001. Our one-line pitch to the world is that 80 per cent of our research centre submissions contain 4* activity—not bad for a university that spent most of its post-1992 life as a teaching-focused institution. *For more, go to <http://tinyurl.com/8lbolj>*

Physics pool flourishes, but big is not enough, Ian Halliday

There are ongoing arguments about blue skies versus applied research, but at a muted level. There are arguments about too much emphasis on esteem, in other words, a bias against youth in contradiction to the history of physics. The trust in the panels is to be admired. Across Europe, there is envy of the system as a management tool mixed with fear of the complexity of the process. *For more, go to <http://tinyurl.com/95ygx9>*