

view from the top ian halliday

Road map with vision for the ERA

European governments believe that science, technology and innovation will drive the knowledge economy in a way that is necessary for continuing European wealth and prosperity. This weight of expectation raises, in particular, the obvious question of whether the European science funding system is as efficient and effective as possible. The next question, which is possibly harder to answer, is whether this system is correctly coupled to the innovation ecosystem and, crucially, to private industry. Finally, can this ecosystem be improved?

In 2007, Research Commissioner Janez Potocnik triggered a debate on these issues, and it was this that led the European association of the heads of research funding organisations and research performing organisations (EuroHORCS) and the European Science Foundation to become involved. Collectively, EuroHORCS is responsible for 95 per cent of Europe's public funding of science and needs a clear strategy to answer the questions posed.

The EuroHORCS and ESF Vision and Road Map, published yesterday, is an attempt to draw out the threads that will be necessary to create a brilliantly designed carpet of success across the European Research Area (*see news, page 7*). The analogy has merit because Europe has many institutions of varying colour, size, and durability. How do we develop the strength and impact of a carpet as opposed to those of its individual threads? How much design and planning is necessary? How much uniformity is advantageous? Can too much variation be a problem?

Europe has a wide range of national funding agencies. They vary in size, in areas of responsibility and in freedom of action. There are problems at a number of levels, most obviously in comparison with the US.

In an odd political way, very large infrastructures, such as the accelerators at CERN, the European Space Agency satellites and the telescopes of the European Southern Observatory, are easy for Europe. No one country can

afford them, so supra-national bodies answer the challenges. Large and small countries benefit proportionally and all willingly join in the communal effort.

Problems start with facilities typified by synchrotrons or large ships, which large countries can afford and small ones cannot. How this investment is optimised either for Europe or for the country that builds the facility is unclear.

The political challenge is how to achieve the European added value in situations where that value is clear to national outsiders but not

clear, or denied, to national insiders. The method might be a political insistence (endorsed at Council of Ministers level) on seeing the proper European case written down as a worked up policy or science justification document.

At the opposite end of the scale, there remains the question of peer review across Europe. It is agreed that correct decision making about science proposals is at the heart of science success. It is a highly non-trivial exercise. Committees need to understand what they are trying to do in the context of a strategic vision.

Do we judge against guaranteed small advances in important areas, that is areas that have had time to develop, or are we looking for risky innovation? Are we opening space for young talent? How do we prevent entrenched barons from capturing the system? How do we discipline people to take science-based decisions, and not decisions based merely on track record or fame of the institution?

Across Europe, nations are importing teams of experienced reviewers to broaden their perspectives. At times, it seems this is an effort to support the airline industry. Some smaller countries have made major strategic decisions to use only foreign review panels. But such systems suffer when proposals from only one nation are on the table; proposals from across Europe would provide real added value. First, competition would intensify at a higher level. Secondly, duplication would be more obvious, and European money would be spent more effectively. But, and it is a big 'but', the combined operation would need to use the best ideas from each national system—and not the lowest common denominator. Is this achievable? How do we perform the experiments?

In conclusion, we believe that we have written a road map, *not* a route, that shows the main areas where there might be European added value. The challenge, over the next year, is for European science to discover whether this is an unrealisable fantasy or a realisable dream. Will it die on the rocks of simplistic, unthinking, national self-interest? Only if the science community, the EuroHORCS and the politicians can agree and implement action will Europe define and seize this added value.

In short, do we have the courage, vision, self confidence and mutual trust that the founders of CERN showed 50 years ago?

More to say? Email comment@ResearchResearch.com

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