

A rationale for the future of the European Research Area

Europeans face major challenges and opportunities over the coming decades, in the face of economic globalisation and environmental and social issues. Research and development will continue to underpin the progress we make. How can the creation of a European Research Area help Europe to face these challenges and opportunities more effectively while drawing in industry's full participation?

The notion of achieving a truly European Research Area (ERA) has underpinned policy thinking in Europe for some years. The idea is to extend the internal market philosophy of the European Community, so that researchers, technology and knowledge can circulate more freely. The ERA is also meant to lead to enable better co-ordination of national and regional research activities, as well as of programmes, policies and initiatives implemented and funded at European level, so that the efficiency and effectiveness of European research improves.

The ERA is just one of an extensive and ambitious range of policies that relate to Europe's continued competitiveness in increasingly knowledge-oriented economies. One recent initiative, the formation of a European Research Council was striking because of its focus on funding excellence in frontier research and thereby attracting people. Other initiatives within and around the ERA include the Technology Platforms and Joint Technology Initiatives, the European Institute of Innovation and Technology and Lead Markets. All are intended to raise standards, develop capacity and catalyse more extensive combinations of higher education, research, businesses and public authorities in the exploitation of knowledge.

"The ERA is not something to make European researchers feel good," Luke Georghiou, professor of science and technology policy and management in the Manchester Institute of Innovation Research, told EIRMA's 2008 annual conference. "It's about what researchers can offer Europe."

In its 2007 Green Paper on the future of the ERA, the Commission emphasised how much work remains to be done in this field and set out its view of the priorities. The paper highlighted concerns about the slow and limited implementation of agreed policies by national governments and funding agencies, made worse by continued fragmentation of public research activities, programmes and policies. Unfortunately, wide support for this analysis has been undermined by perceptions that the Commission's view of ERA is as a centralist tool, and that it is too concerned with public research and the Framework Programme.

Janez Potocnik, European commissioner for science and research, explained to EIRMA members in a recent eIQ Viewpoint that “the Commission has probably never been more pro-business”. He has looked for the business community to reciprocate this view and to lend full support to measures to achieve a strong research system capable of underpinning broader social and economic interests.

Grand challenges and research-friendly ecologies

Part of the consultation process on the ERA Green Paper involved the establishment of a series of Expert Groups. One of these, led by Georghiou with the participation of EIRMA secretary general Andrew Dearing, was asked to examine the rationale for ERA and make evidence-based recommendations for its future.

The group’s conclusions are straightforward. The ERA must become relevant to the wider community as well as within public research. Its philosophy must move away from correcting European deficits towards addressing European opportunities. The pathways to its implementation must be coherent with the globally connected environments in which research and innovation activities now take place.

The study builds on the measures discussed in the Green Paper, and is backed up by a detailed analysis of what it will take to create the community of researchers, businesses, public institutions and policies necessary to form an effective ERA. The expert group describes the environment in which these communities work as a research-friendly ecology, to reflect the diversity of entities involved, their complex interdependencies and the inherent tension in such systems between competition and collaboration.

The ambitious part of the group’s response is to point out that, with a pro-business and pro-R&D Commission, a refocused ERA represents an opportunity to make substantial changes in European priorities. With discussions for the Commission’s next budget period soon to begin, widespread popular awareness of the ERA could lead to greater backing for strategies that move the focus of the European budget away from agricultural subsidy, and better connect research with broader policy objectives.

By positioning the ERA as the best way, for example, to tackle Grand Challenges such as climate change, energy security, and an ageing population, there is more chance of getting the public recognition and business backing it needs and more chance of achieving progress and impact. Three types of Grand Challenge are envisaged, and are part of a general ambition to strengthen linkages between the supply and demand sides of European research. They include social and environmental issues, such as climate change and an ageing population; economic challenges relating to the need for innovation-friendly markets as outlined in 2006 by the Aho Group report; and opportunities provided by frontier research.

Because such Grand Challenges are likely to be quite large, there will necessarily be relatively few of them. Consequently, those that get supported will have to meet strict criteria, showing that working on them will add value to Europe, that they have a research dimension to ensure the buy-in of the science community, and that they are actually feasible. There will also need to be political support at the highest levels, being approved and monitored by the European Council, with the corresponding level of involvement from the Commission and Parliament. This may involve adapting the Framework Programme and national programmes, for example, to align with European policy needs in transport or health.

“This needs a lot of political commitment at the highest level, from the Council, the Parliament and the Commission,” said Georghiou, drawing a parallel with the backing won by the recent Strategic Energy Technologies Plan. “How do we systemise the sense of political opportunity and the urgency that underpins that plan?”

Creating the research-friendly ecologies required to underpin such an ERA will demand profound changes in approach. One of the first issues is whether individual research efforts in Europe really are too small (‘sub-critical’) to be effective. This could be true at many levels: individual research teams that lack critical mass; institutions that are too small to compete internationally; university departments that cover too many research topics; and opportunities to gain effective scale through collaboration or co-ordination that remain unexploited.

The group believes that ‘sub-criticality’ is more damaging for institutions than individual research groups. Large institutions with a wide range of capabilities are better able to address interdisciplinary problems and to work with business. The expert group argues that the ERA can address sub-criticality by promoting networked specialisation, which links groups with complementary capabilities, and localised concentration, in which local institutions are merged until they reach critical mass in their key disciplines, or become a rich source of multidisciplinary skills.

Georghiou gave the example of Syngenta, which wanted to start using sensor technology in its seeds and plants business. It chose to partner with Manchester University because it was the only place the company could find that could offer the eight different disciplines it needed, as well as the ability to integrate them to serve its business ends.

What else can be done to strengthen the research ecology? There’s no sense of coercion or ‘one-size-fits-all’ solutions intended here: the expert group recognises that the way forward will vary from case to case and that ‘related variety’, the idea of linking complementary rather than similar research units, is important, giving more opportunities for successes to flourish. The expert group suggests a broad canvas:

- creating a more open and international market for applied research services, which can act as the vital stepping stone between academic research and commercial application.

- recognising the way that charitable or philanthropic foundations can articulate the public's research needs as an input to the ERA.
- giving research-funding organisations a more coherent voice in Europe, to enable them to be clearer about the kinds of work they want to fund and how it relates to European policy objectives.
- strengthening the peer-review process, by doing more international (rather than national) peer review and perhaps by creating a European College of Reviewers to help the process.
- continuing the university reform agenda to give universities the autonomy and accountability they need to meet the challenges with which they are being presented.
- making it easier for researchers to move between jobs, countries and disciplines.
- strengthening links between small and large firms, following the supply chain rather than trying to target SMEs separately from their main customers.

"We need to try and get away from SME mania," said Georghiou. "Smallness is not something to aspire to. The last thing you want to do is to disconnect SMEs from the large companies that provide 90% of their customer base."

Cohesion, co-ordination and policy

The mainstays of the European vision relate to competitiveness and to cohesion, which is the ambition to raise standards for everyone. Cohesion is sometimes considered as distinct from competitiveness: do you hire one researcher from each of the Union's countries to promote cohesion, or do you hire the best people you can get from wherever they are, in order to get the job done most quickly?

The expert group's response is to recognise the possibility to engage research institutions with local users and issues, especially by using applied research to build the 'missing mezzanines' discussed at the 2007 EIRMA conference. The ERA can then help such institutions bring the wider benefits of research and innovation to bear on their communities by acting as a conduit for information flows into and out of the region and by providing links to firms and research institutions in other regions and countries.

"The key is access to the benefits of R&D," said Georghiou, "but you need to do some research in order to absorb other people's research."

One of the most important ideas is that public money spent on research and innovation, and the policies that inform spending decisions, should be aligned with the policy directions set by the European Council and Parliament as representatives of the member states. Improving this alignment would increase the value for money that European taxpayers get for their investment, and make it more obvious that European research is being directed towards meeting European ideals. The obvious challenge here is to avoid the risk (and the perception) of picking winners.

“We’re arguing that European research needs to be connected to the European mission,” he added.

The expert group says that such alignment should exist at both the European level, in the Framework Programme, and in co-ordinated national research. It says such alignment should be possible in both thematic areas, such as policies for environment, energy, agriculture, industry and public health; and in cross-cutting areas, such as enterprise and innovation policy and market policies. But the group recognises that such broad co-ordination is the core challenge for the success of the ERA, requiring both horizontal co-ordination between national and European users and providers respectively, and vertical co-ordination between users and providers.

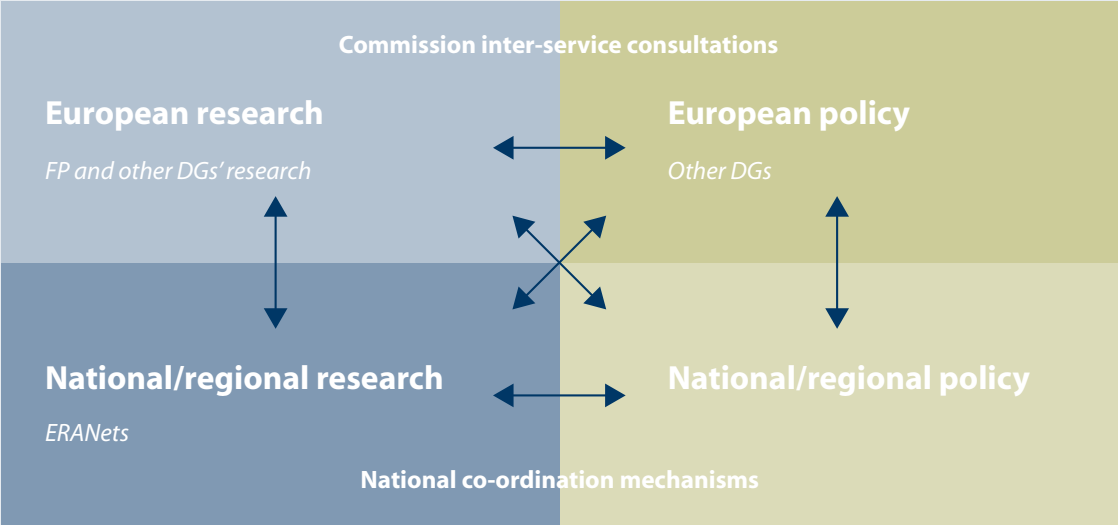
Europe should improve two forms of co-ordination in order to make its research more effective

Across themes

- environment, energy, information society and media, agriculture, industry and public health

Across policies

- enterprise and innovation policy and market policies



Source: Professor Luke Georghiou, University of Manchester

This, then is the heart of the expert group's plans for the ERA. Make it a tool that more evidently addresses some of European society's most pressing concerns. Ensure that its actions align with the policies created by the elected politicians to reflect those concerns. And ensure that implementation of those policies is intelligently reflected throughout empowered research and innovation environments that are constructed to reinforce local strengths.

If this can be done, then there's a chance that the ERA will get the public and business backing it needs to create a thriving and more effective research and innovation climate in Europe. With the next round of budget negotiations in the near future, a well articulated argument for the ERA could even see a wholesale retargeting of European resources that would help the region become the world-leading knowledge economy proposed back in the year 2000.

Georghiou summed up what is at stake.

"We have to come along and say that the great problems of Europe are there and if you give us the support we can do something about them. But we need to talk about implementation in six months, not the four years that other initiatives have taken," he said. "If we're successful we can equip the research community to make its central contribution to the future economic and social well-being of Europe's citizens. If we get it wrong, well, that's very bad news."

Links

European Research Area (ERA)

http://ec.europa.eu/research/era/index_en.html

European Research Council

<http://erc.europa.eu/>

Technology Platforms

http://cordis.europa.eu/technology-platforms/home_en.html

Joint Technology Initiatives

http://ec.europa.eu/information_society/tl/research/priv_invest/jti/index_en.htm

Professor Luke Georghiou

<http://www.mbs.ac.uk/research/academicdirectory/viewprofile.aspx?sid=5029990&prev=2>

EIRMA's 2008 annual conference

<http://www.eirma.org/f3/showthread.php?t=7583>

European Institute of Innovation and Technology

<http://ec.europa.eu/eit/>

Commission Green Paper on ERA

<http://www.eirma.org/eiq/010/pages/eiq-2007-010-0002.html>

Janez Potocnik, European Commissioner for Science and Research, on the business case for the ERA

<http://www.eirma.org/eiq/011/pages/eiq-2007-011-0005.html>

Expert Group on the ERA Green Paper

<http://www.eirma.org/eiq/010/pages/eiq-2007-010-0002.html>

Report of the ERA Expert Group Report

http://www.eirma.org/f3/local_links.php?action=jump&id=3421

Strategic Energy Technologies Plan

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/493&format=HTML&aged=0&language=EN&guiLanguage=en>

The missing mezzanines

<http://www.eirma.org/eiq/011/diagrams/eiq-2007-011-0012.html>