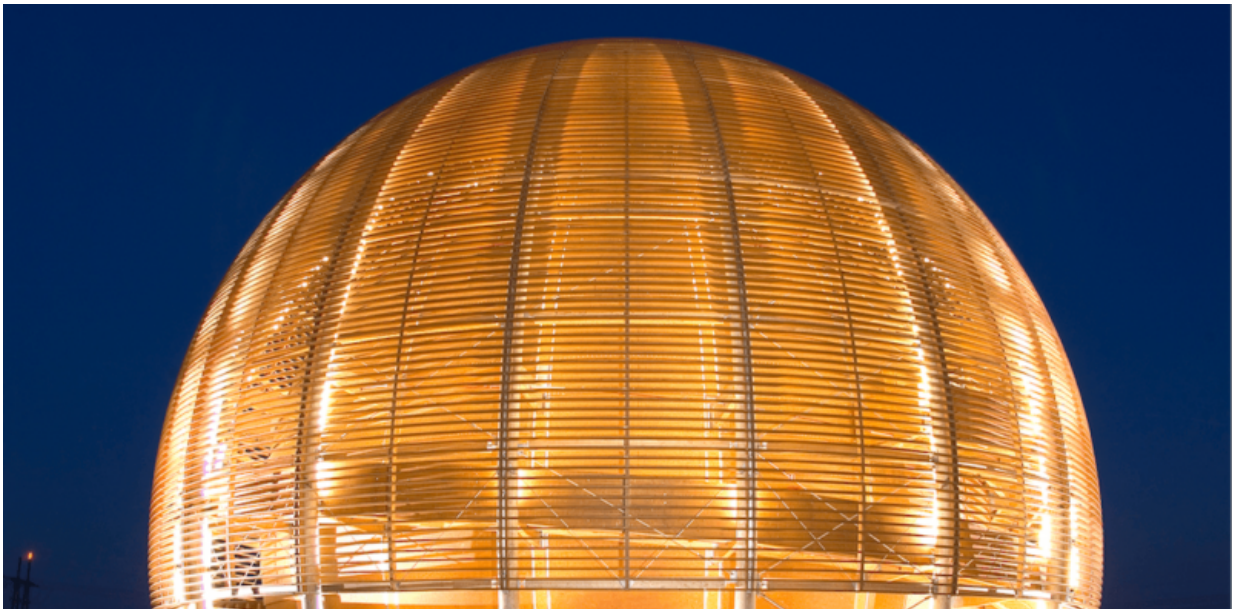


What the European Union can learn from CERN about international co-operation

April 20 2016, by Roger Barlow, University Of Huddersfield



Credit: CERN, CC BY-SA

Can Europe work? This is the real question being asked of British people on June 23. Behind the details of subsidies, regulations and eurozones lies a more fundamental puzzle: can different nationalities retain their own identities and work together, without merging into some bland United States of Europe?

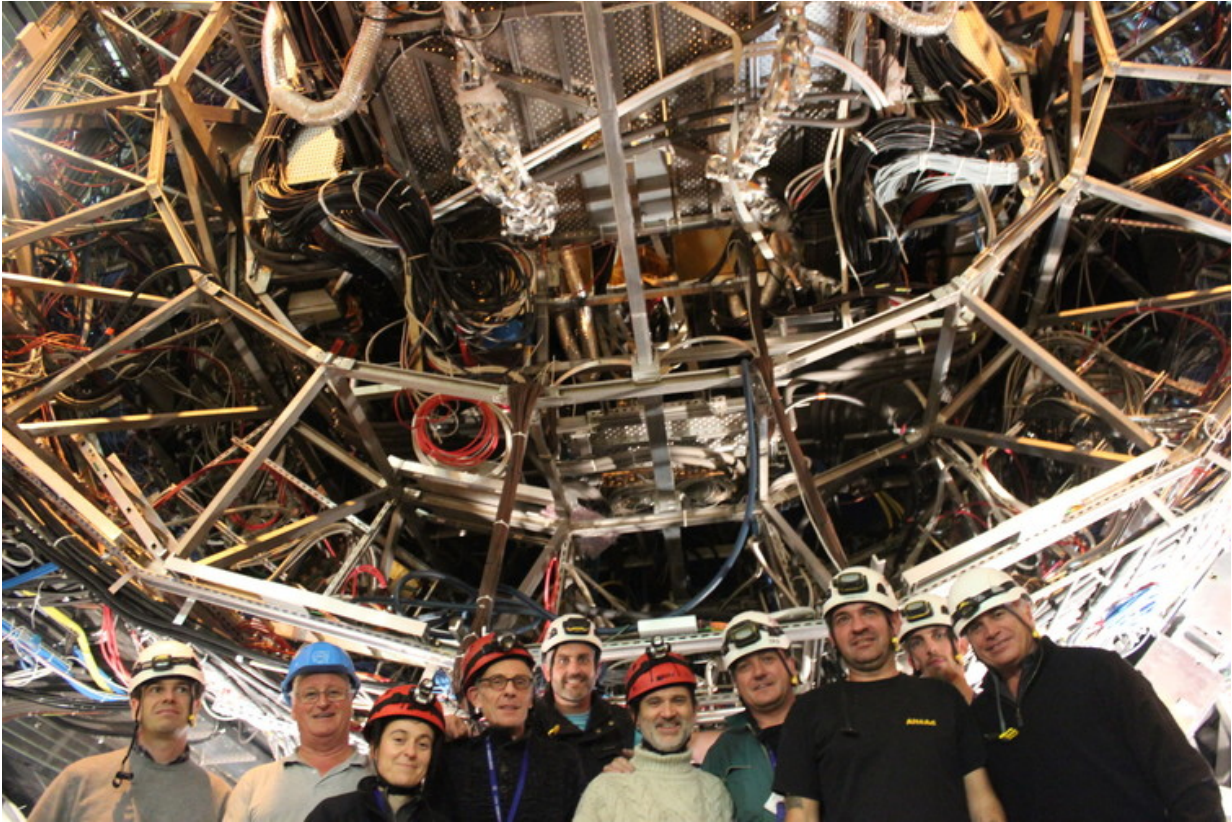
I would like to suggest that there may be an example to follow in the

history of [CERN](#), the international research organisation based in Switzerland, and home to the world-famous particle accelerators used recently by teams of thousands of scientists from many nations to confirm the existence of the Higgs boson.

There are many similarities between CERN and the EU. The former was founded in 1954 and the latter in 1957, when the [Treaty of Rome](#) was signed (although it was then called the European Economic Community). Both CERN and the EU have grown over the years. The EU started with six countries and now brings together 28. CERN has grown from an initial 12 members, including the UK, to 21.

Both also emerged as a response to a post-war world in which the two superpowers dominated, not only militarily but also economically and scientifically. The US and the USSR were supreme on either side of the iron curtain, and with their great resources they pushed ahead with prestige research: space travel, electronics, and nuclear physics.

The European nations were impoverished by the financial and human cost of the war. Many of its greatest (often Jewish) scientists had fled to the US and were slow to come back. None had the people or the capacity to compete on their own.



Too busy doing bad-ass experiments to argue about fishing quotas. Credit: CERN

Teamwork

CERN has proved remarkably, and enduringly, successful. The recent discovery of the Higgs particle at the Large Hadron Collider is just the latest in a string of ambitious but successful accelerator projects and scientific discoveries that have rewritten the [particle physics](#) textbooks. It was at CERN that the [world wide web](#) was invented, changing the lives of billions of people.

Nations such as France, Germany, and the UK, which were once proud of their national accelerator laboratories eventually had to abandon their

independent programmes and convenient particle accelerators at Saclay, Hamburg and Harwell had to be sidelined in favour of the central machine.

Herwig Schopper, a past CERN director general, wrote a [fascinating account](#) of the high-level negotiations needed to persuade the national governments to support the construction of the LEP accelerator (the LHC's precursor). All kinds of tactics were needed to placate national stubbornness – such as over money in the UK and national pride in Italy. He also details the schmoozing and diplomacy skills that need to be deployed by the head of CERN to keep every national government happy.

It has not always been a smooth ride. There have been strong disagreements about the size of the total budget and how it should be shared between member states.

As national science budgets have come under pressure, the millions spent on CERN have inevitably been eyed jealously by other scientific disciplines. Why spend quite so much on particle physics when high quality grant applications in other fields – the "unfunded alphas" – were being turned down due to a lack of funds?

So the existence of CERN and the way it is organised have come under strong scrutiny. In the 1980s, the [Abragam committee](#) was set up, at the insistence of the UK, to look for 25% savings at CERN. But in the end it recommended the budget should be kept as it was. And as recently as 2009, Austria threatened to leave. It was only dissuaded after an international outcry.

So the organisation has survived – not unscathed, and not unchanged – but it has survived.

Life and work at CERN

Although there is a small core of permanent CERN employees, most of the men and women working at the laboratory, on the experiments and accelerators, are visitors from national universities and institutes, or postdoctoral researchers on short-term contracts. Many will take up university posts in due course.

So the members of the workforce retain their national links and national characteristics. Identity is important. The French, Germans and Italians I have worked with appear to have conformed to their national stereotypes, and I suspect they find my behaviour typically "British". (I remember when, walking back from lunch to our experiment, we were hit by a sudden violent hailstorm. Everyone ran for cover – but the UK contingent just kept walking). The most popular topic of conversation in the canteen is probably – apart from work, of course – the idiosyncratic features of different languages. Being thrown together to work in international teams does not blur the differences, it sharpens them.

So European co-operation, at least in this example, works. European particle physics has overtaken not only the former eastern bloc, but even the United States, which now has nothing to match it.

It seems that Europe really exists, it is not just a collection of countries that happen to be adjacent on the map. It means something to be a European, at least in the context of scientific co-operation, without in any way lessening one's identity as British (or English, Welsh, or Scottish for that matter). Hopefully we can now make that work in other fields as well.

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