

Viewpoint

Greater than the sum of the parts

The president of Council offers a personal insight into the continuing attraction of collaboration with CERN.



CERN was founded in 1954 with the aim of bringing European countries together to collaborate in scientific research after the horrors of the Second World War. After the end of the war, however, Europe had been divided politically by the “Iron Curtain”, and countries in the Eastern Bloc were not in a position to join CERN. Nevertheless, through personal contacts dating back to pre-war days, scientists on either side of the divide were able to keep in touch. From the start, CERN had schemes to welcome physicists from outside its member states. At the same time, the bubble-chamber experiments in particular provided a way that research groups in the East could contribute to physics at CERN from their home institutes. The groups could analyse bubble-chamber events with relatively few resources and make their mark by choosing specific areas of analysis.

In the case of my country, Poland, this contact with CERN from the 1950s provided a precious window on modern science, allowing us to maintain a good level in particle physics. The first Polish physicist was welcomed to the laboratory in 1959 and was soon followed by others when CERN awarded several scholarships to young researchers from Cracow and Warsaw. Collaboration between CERN and Polish institutes followed, and despite the difficult circumstances, physicists in Poland were able to make important contributions to CERN’s research programmes. In 1963, the country gained observer status at CERN Council, as the only country from Eastern Europe.

My association with CERN began when I was a student at the Jagellonian University in Cracow in the early 1970s, working on the analysis of events collected by the 2-m



Agnieszka Zalewska, president of CERN Council. (Image credit: Andrzej Zalewska.)

bubble chamber. During the 1960s, the experimental groups in Cracow and Warsaw had made the analysis of high-multiplicity events their speciality, and this was the topic for my doctoral thesis. The collaborative work with CERN gradually extended to electronic detectors, and from the 1970s Polish groups contributed hardware such as wire chambers to a number of experiments. The DELPHI experiment at the Large Electron–Positron (LEP) collider already used a variety of Polish contributions to both hardware and software.

The start-up of LEP coincided with the big political changes in Eastern Europe at the end of the 1980s. Poland became the first former Eastern Bloc country to be invited to become a CERN member state, and in July 1991 my country became the 16th member of CERN – a moment of great pride. Hungary, the Czech Republic and Slovakia followed soon after.

The end of the 1980s also coincided with the development of the World Wide Web to help the large collaborations at LEP work together. It revolutionized the way we could work in our home institutions. In particular in Poland, a dedicated phone line set up in 1991 between CERN and the institutes in

Cracow and Warsaw provided a “magic” link, allowing us, for example, to make changes remotely to software running underground at LEP.

It is hard today to imagine the world without the web. It was CERN’s gift to humanity – creating connections, allowing the exchange of ideas and communication between people all over the world. Developed in a scientific, non-commercial organization, the web’s international annual economic value is now estimated at €1.5 trillion. As Chris Llewellyn Smith, CERN’s director-general from 1994 to 1998, asked: how many yearly budgets of CERN have been saved because it was developed quickly in a non-commercial environment?

Now, after some four decades in particle physics, I have the enormous privilege to be president of CERN Council. I have already experienced the exceptional moment when the Israeli flag was raised for the first time at the Meyrin entrance to the laboratory, representing the first new member state to join the organization for 14 years. Other countries are at various stages in the process of accession to become member states or to attain associate membership. In discussions with the physicists from these countries, I recognize the same feelings that we had in countries like Poland in the 1960s or 1970s.

As one person said to me recently, it is not only CERN as the organization, but the idea of CERN that has such a strong appeal. It brings people together from different nationalities and cultures, people who have different ways of doing things – and this brings added value. CERN really is something where the whole is greater than the sum of the parts, as we all work together towards a common goal – a noble goal – to learn more about the universe that we inhabit.

During the past 60 years, the idea of CERN has succeeded in the goal of bringing European countries to work peacefully together, helping to bridge the divisions that existed between East and West. I sincerely believe that this “idea” will continue to inspire people around the world for years to come.

● Agnieszka Zalewska, CERN Council president and H Niewodniczański Institute of Nuclear Physics of the Polish Academy of Sciences.

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WELCOME

CERN Courier – digital edition

Welcome to the digital edition of the March 2014 issue of *CERN Courier*.

In 1986, the start of the LAA project to study new experimental techniques for the next step in hadron-collider physics allowed CERN to join the era of microelectronics – essential for experiments at the LHC, where the conditions are challenging in many respects. The ALICE experiment is tackling puzzles surrounding quark–gluon plasma and under what conditions it is actually formed at the LHC. Elsewhere, antimatter provokes other questions, such as how does it behave with respect to gravity? Studies of this kind at the low-energy, high-precision frontier can cast light on physics that lies beyond the reach of the LHC.

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