» THE INTERVIEW

STRATEGY AND ROLE OF EVALUATION OF RESEARCH AND THIRD MISSION AT INFN

Interview with Giorgio Chiarelli, coordinator of the INFN Working Group on Evaluation and ANVUR expert for evaluation of the Third Mission

Since 1997, INFN has entrusted the evaluation of its research activities to an International Evaluation Committee (CVI), composed of seven experts from different countries, including an expert in economics and a representative of the industrial world. The report of the CVI, in addition to the evaluation aspects, also contains proposals aimed at improving the overall performance of the institution. Since 2000, in order to prepare the documentation for the CVI, and to coordinate the response to its (CVI) suggestions, the internal evaluation of research is coordinated by the Evaluation Working Group (GLV), which –among other things- evaluates the milestones proposed annually by individual experiments, the impact of the Institution's participation in international experiments and the degree of leadership exerted by INFN researchers. In addition, the GLV reports to the CVI on Third Mission activities, in terms of economic exploitation of research and production of public goods of a social, educational and cultural nature. Testifying the growing impact of the Third Mission on the research system is the fact that the National Agency of University and Research System Evaluation (ANVUR) has included these activities in carrying out the Research Quality Evaluation (VQR). We discussed these issues with Giorgio Chiarelli, since 2012 National Coordinator of the GLV and, since 2015, national expert of the Third Mission evaluation for ANVUR.

What is the purpose of internal research evaluation?

With a quip I could say: to improve ourselves. The (self-)evaluation of our activities is inherent in INFN's DNA. Every experiment, within the individual National Scientific Committees (CSN), has its own referees who follow it right from the proposal phase. This discussion is useful: there are observations, sometimes criticism, but always constructive. In addition, the referees often intervene to understand if there are any problems and to help. Even if an important part of our research takes place abroad, and is therefore nevertheless subject to the scrutiny of structures outside the Institution, the monitoring and evaluations we do internally as GLV provide our management and the CVI with the information necessary to improve

» THE INTERVIEW

ourselves. The goal of everyone is to obtain positive results, helping INFN to pursue its mission.

What tools, in addition to those of a bibliometric nature, have been provided?
The collection of bibliometric (but not only) indicators by the Institution is dictated by historical reasons, because they are used during evaluations by the Ministry of Education, Universities and Research (MIUR) or by other agencies. There is, however, more interesting data that we collect: from degree and PhD theses to the talks of our researchers in certain conferences, from leadership roles in international experiments to the number of articles written in collaboration with foreign researchers, to make a few examples. Over time we have added information, driven by both internal and international debate, or sometimes directly from ideas emerging in the discussion with the CVI. In recent years, for example, there has been increasing attention to information on gender, in order to understand if and where phenomena that artificially alter the balance occur. More recently, the post-training destination of our young researchers has acquired a growing importance. Part of INFN's mission is to train the scientists of the future: understanding what are the job opportunities is an important piece of information and, at the request of the CVI, we have also published one of these studies. Then, currently, the main goal is to understand how to monitor (and evaluate) activities in the enormous LHC experiments. Understanding what is important in our activity is part of the "measuring" challenge. In this we are helped by being linked to the debate that takes place in the National Scientific Committees and by the scientist's approach, which means trying different methods and comparing the results.

Third Mission means knowledge and technology transfer. Thus, also organisations that are traditionally involved in basic research are required not only to communicate but also to evaluate the economic impact of their activities. How can that be done?
First of all, I would like to outline that looking at the economic impact of research, as important as it may be, can be restrictive and sometimes short-sighted. Therefore, in the following, by "impact" I always mean also social impact.
Research Institutions are an extremely diversified world, ranging from Institutions that have activities in almost all research areas, to other small but significant organisations, as well as others which also have an important role outside research. Looking for a possible common denominator, I think the first step is to realise that we (Institutions) possess a wealth of knowledge that must be exploited by transfer to society.
In the last fifteen years, with an accentuation since the 2008 crisis, a strong emphasis has been placed on knowledge transfer that also implies an economic exchange (patents, spin-offs, etc.). This emphasis has led many Institutions to think they are being left out, since they are engaged in basic research or research without technological implications. In reality, I think we should change our way of thinking. The impact (especially innovative impact) requires a change of vision. If we start by listening to the needs of our country, all Institutions can play a role. The experience of VQR, which aims to provide an overall

» THE INTERVIEW

picture of the Third Mission activities of all Institutions, can play an important role.

What are your suggestions for INFN?
As for INFN, the tradition of involvement in research outreach activities is in its favour, but we must bear in mind that the world changes. I am thinking, for example, of the recent changes in the secondary education system in Italy, with the introduction of modern physics in last year syllabuses and of School-Employment Alternation. They can be excellent opportunities, but to seize them it is necessary to adapt the way we work, we must organise courses and opportunities for discussion on these issues. As for technology transfer, this is less part of our DNA, often we do not understand the value of what we do and, let's be frank, we have limited experience in fields such as intellectual property or company start ups. INFN has made and is making efforts in this direction, and I think the time has come to expose the younger researchers to these issues.

But is it really possible to establish a common ground for discussion with political and economic players that interact with the research world? To find a shared language and measurement system?
Good question! Let's say there is definitely the need to talk with all the players involved: the Third Mission cannot be carried out without interacting with the economic and social forces. The language differences are a reflection of a different way of addressing the same issues, of looking at the same problem from different angles. Certainly everyone has to make an effort, because finding a common language is the first step towards working together. As for identification of the measurement system, this is an ongoing process. Perhaps the most important thing today is to understand that the indicators cannot be static. Each measurement changes the object measured and we must be able to follow these changes. ■