



Position Statement on Advancing research competitiveness through collaboration

This statement takes into account the discussions that took place during the two policy makers Round Tables organised within the 5th BELIEF Symposium. This event, jointly organised with the CHPC in South Africa, took place in Johannesburg, South Africa on the 7th – 9th December 2009.

Remarks from the Policy Makers Round Table discussion

People are a key element in the discussion about e-Infrastructures. Thus, the reflection about how a range of purposeful partnerships can contribute to the sustainable growth of e-Infrastructures and their expansion to new research and application areas is essential.

In particular, research partnerships between players in different areas of the world are becoming even more important, as scientists and researchers are facing new and more complex challenges in a competitive environment; natural disasters prevention is a clear example. There is no doubt that High Performance Computing (HPC) can help speeding up processes. This is currently a discussion which is held on a worldwide level and South Africa has taken stake in it.

In particular, when focusing on the EU-South African part of the discussion, following issues are of importance and have to be addressed:

- Ways to fostering collaboration amongst Africans and between Africa and international partners
- Using e-Infrastructure to leverage international partnerships for the benefit of the researchers (providing technical support, enhancing their research output)
- Best practises: lessons learned from international partners and how to apply them in Sub-Saharan Africa and Africa
- The role of Education and Training towards creating a critical mass of skilled researchers to bridge the digital divide
- Funding issues, funding agencies' commitment and long term visions and goals

Collaboration and Partnerships: building the Human Layer

Collaboration is nowadays mandatory. Despite of the fact that different countries have different levels of development still, all together reveal common challenges and common successes. Moreover, the challenges that we are facing are of multidisciplinary nature. Therefore collaborations have to be established at various levels:

- Cooperation between the different institutes and departments within the country
- Cooperation between research centres and industry
- Collaboration and cooperation between computer specialists, application developers and users
- Setting up of international virtual collaboration teams among academic institutes
- Establishing links to neighbour countries through the setting up of small, bi-lateral projects and partnerships



- Setting up ties with individual sites of DEISA and PRACE

The goal of the various collaborations, which can have different forms and partnerships, should be to bring together a critical mass of people. As not every department or institute has a specialist in all scientific areas, the formation of a virtual application team could overcome this lack and provide new intellectual forces when and where needed. Links between different centers with different equipment and specialisation should be established as well. In order to create one big virtual research community, interoperability and vertical transparency of applications have to be in high priority, as we are flooded with many types of platforms and computational resources.

Education and Training

Building on human capacity is an imperative and training of human resources is the way for achieving this. It is important to promote e-Infrastructures and HPC and encourage students to get involved into this new way of doing research. Training, however has to meet not only the needs/requests of the researchers, but also those of industry. In the past years, as part of their normal studies, students became exposed to the existence of e-Infrastructures. Thus, when they go out to industry or do research they are aware of the fact that they can use e-Infrastructures to address a specific problem. Nonetheless, this is a “two ways process”: Creating research and development activities in an industrial environment is a precondition for creating a pool for the human resources that we would like to attract and train.

In this new and competitive research environment there should be an effort to increase knowledge, but also to develop new and innovative training schemes. The transition from EGEE to EGI could offer an example to how to do this: a central pot of money for organising training across Europe will replace the individual efforts in each country. Thus, training will be no longer depending on the initiatives and funding of each of the countries. The final goal will be to create in each country a body of qualified trainers. This successful scheme could be applied also in Africa.

Funding issues and Sustainability

The limited resources dictate the determination of the e-Infrastructures that we are putting in place for science and research.

Resources have to be made available for establishing e-Infrastructures but also for encouraging the use of them by the user communities. The setting up of a structured ecosystem of institutional, regional and national facilities can be supporting to this.

We have, however, to be careful to not only offer seed money. It is, of course, important to fund the scientists themselves as this is done through various channels; but also to fund the initial use of infrastructure by these different user communities. The result is the build up of virtual research communities inside the country. These communities are aware of what is available and they work together. By doing so, a virtual application team can be formed, based on mutuality without extra funding.

Another aspect that should be taken into consideration is public-private partnerships. The industry has struggled in using some of the more sophisticated computational systems that exist, however, very often with limited success. Companies, specifically SMEs, have problems that cannot be solved on their workstations and they need to be addressed by larger computational systems. They don't have the hardware and they are not going to acquire it as there is no return on investment for them; they don't even have the intellectual capital to use more sophisticated systems.



Thus they don't see the pathway to the solution and they are not aware of the plethora of e-Infrastructures that is available to help them out and offer them solutions. The above demonstrate the need for service mentality that the research environment must have for the private sector. A number of successful examples of those kind of partnerships already exist, in the States but also in Europe.

We hope that these thoughts, which summarise the two Round Table discussions among policy and decision makers, will help to clarify in which direction investments and efforts should go. Europe can now show its strength, competitiveness, cohesion and scientific excellence. Europe can and shall offer its successful models to demonstrate which ones have proved to be successful and maybe applicable elsewhere. Europe can and should play an even more active role in Sub-Saharan Africa and in the short-medium term it will have its return on investment under the political, socio-economical and visibility point of view.