The Max Planck Society as part of the German science landscape

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In Germany the system of science support is quite well structured. On the one hand there are the Universities where most of the research is done. They are financed by the Federal States which are also responsible for the educational system in Germany. The research done at the Universities is supplemented by four institutions which are jointly founded by the Federal States and the Federal Government (see Fig. 1). These are the Max Planck Society for basic research, the Fraunhofer Society for applied research, the Helmholtz Society which mainly consist of large Centers often formed around large instruments like accelerators and last not least the Leibniz Society, which has significantly grown after German reunification, partially in order to accommodate some of the institutes of the former German Academy of Sciences. It is positioned between the Max Planck and Fraunhofer Societies. The contributions of the Federal States and the Federal Government to the budgets of the four institutions is quite different. While the Helmholtz Society is financed to approximately 90 % by the Federal Government, the Max Planck and Leibniz Societies are financed roughly 50 % each by the Federal States and the Federal Government. A specialty of the Fraunhofer Society is that 50 % of its budget has to come from contracts with the industry. Finally, there are some research institutions financed exclusively by the Federal Government like the PTB, the German equivalent of NIST, which have certain legal obligations such as controlling the standards and measurements.

The mission of the Max Planck Society is to advance innovative and interdisciplinary research of highest quality at the frontiers of the different fields. With its works it wants to contribute to the economical and intellectual advancement of mankind. Max Planck once stated "Knowledge must precede application".

Characteristic for the operation of the Max Planck Society is that

– it promotes outstanding scientists from all nations. In their work they enjoy autonomy in selecting their research themes and methods.
– it receives stable long-term public funding for its institutes which are flexible, dynamic research units.
– it imposes strict quality control with the help of International Scientific Advisory Councils.
– it supports technology transfer with the help of Max Planck Innovation, a separate entity.
– and it pursues interdisciplinary, internationally oriented research.

The international orientation of the Max Planck Society is clearly visible from the following facts:

– of its 16.9 thousand staff members, 16.4 % are from other countries (all members refer to January 2011). Among the scientific staff members this percentage is even 33.1 % and among the institute' s director 29.8 %. Of the 4600 junior and guest scientists approximately 50 % are from abroad and for the post-docs this number is as high as 88.6 %. Approximately 50 % of the PhD students are from other countries.

The 273 directors who constitute the Scientific Members of the Max Planck Society belong each to one of its three Scientific Sections, i.e., the Chemistry, Physics and Technology Section (50 %), the Biology and Medicine Section (40 %) and the Human Sciences Section (10 %). Typical research areas are astronomy, physics, chemistry, mathematics, material

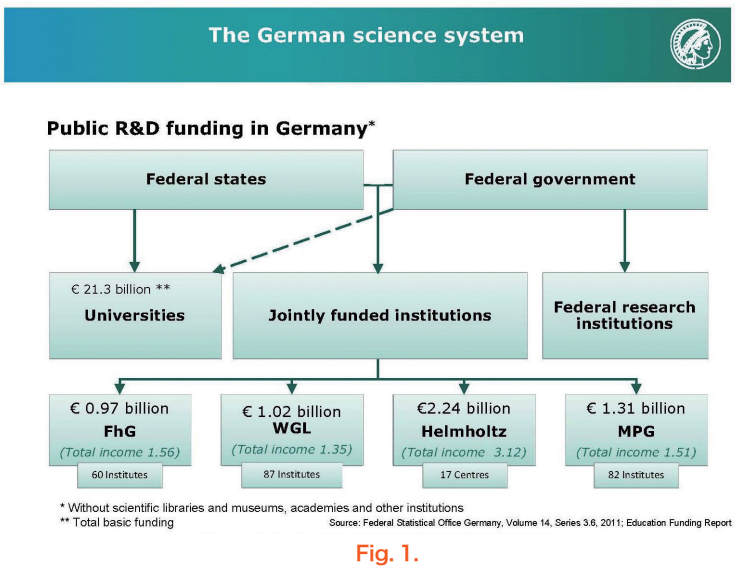

Fig. 1.

sciences and earth sciences in the first case, developmental biology, genome research, structural biology, neuroscience, bio-imaging, ecology and environment in the second case and cultural studies, juris prudence and social plus behavioural sciences in the third case.

The 82 Max Planck Institutes are distributed all over Germany since all Federal States contribute to the budget of the Max Planck Society (see Fig. 2). Special attention is paid by the institutes to train very well their PhD students. Therefore 62 International Max Planck Research Schools have been created jointly with the local Universities. They provide for 2700 PhD students an excellent education in their fields of research and are a successful instrument for internationalizing the German research landscape.

During the last years the Max Planck Society has further developed its strategy to internationalize through exchange and cooperations. There are different instruments available for this purpose. The simplest ones are the Max Planck Partner Groups. They are supported by €20 thousand/year for a maximum of 5 years. The German as well as the foreign partners should be less than 40 years old.

An important form of cooperation are the Max Planck Centers. They are based on excellent research programs involving in each case at least one Max Planck Institute and a high-ranking international research institution. The funding is bilateral and the lifetime is 5 years with a possible extension. The quality is assured by a Scientific Advisory Committee. Finally there exist also two Max Planck Partner Institutes and a small number of Max Planck Institutes (MPI) in other countries, mainly in Europe. The only MPI outside of Europe is in Florida and was set up rather recently. It is working in the biological sciences.

The concept of the Max Planck Society how to pursue basic research has led to many outstanding results. They were recognized by a large number of international prizes, among them 32 Nobel prizes since 1948. The work has also led to many practical results. There are 80-100 patent applications every year. The annual income through licenses is €15 Mill. Since 1990 there have been 86 starts up initiated by the Max Planck Society of which 7 companies are listed on the stock exchange by now. The total work force on the spin-offs is around 2,300.

The collaboration between the Max Planck Society and the science community in Japan is a long-standing one. May it be strengthened and extended in the future to the benefits of our two countries.

Acknowledgement: I thank the Max Planck headquarter for making the above material available.

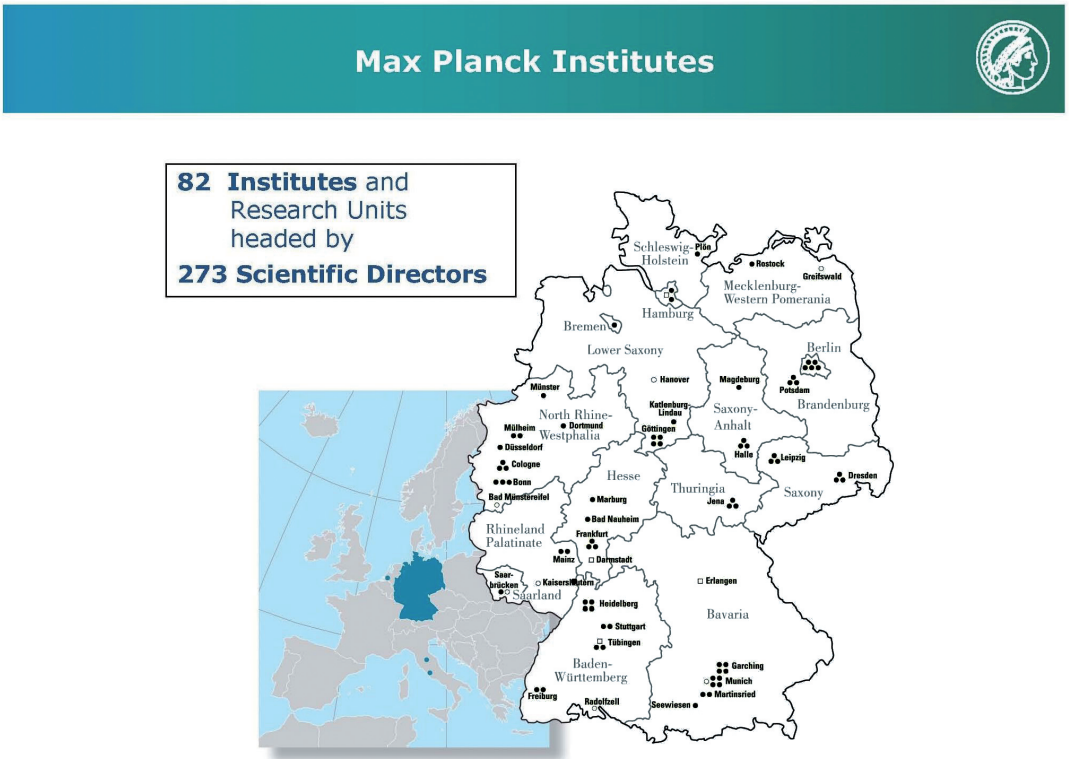

Fig. 2.