The Research Agenda of the E.U. In Brief, Focused on Innovation

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The development of the E.U. became ever more rapid and irreversible during the last thirty years. It is the main aim of the following presentation to measure progress done and to offer a comprehensive sketch of the so much debated about research agenda of the E. U. and its very ambitious programs of reform and innovation. These could only be boosted by tremendous scientific development and technological advancement.

Keywords: reform, change, innovation, participation, renewable energy, renewal

During the period of consistent change in the formation of the E.U. there was included for the first time a chapter on research in the Single European Act from 1986. This was an important step towards a clear regulation and the scientific improvement that were to shape the future of science in the E.U.

The European Research Framework Program stretches over the period 1984-2020. It is divided in eight time intervals with a particular amount of money allocated. Thus, the first endeavor developed between the years 1984-1987, with 3.3 billion Euros allocated to it. The second emerged between the years 1987-1991 and had a budget of 5.4 billion Euros. The third framework program covers the years of 1990-1994 with a total budget of 6.6 billion Euros. The fourth framework program was set between the years 1994-1998 with a sum of 13.2 billion Euros. The fifth framework program stretched over the period 1998-2002 with a budget of 14.9 billion Euros. The sixth framework program covered the period 2002-2006 with a total sum of 19.3 billion Euros. The seventh framework program lasted from 2007-2013 and was allocated a budget of 55.9 billion Euros. Eventually, the Horizon 2020 program stretches over 2014-2020 with a total budget of 80 billion Euros. In 2000 the Lisbon European Council launched the European Research Area (ERA). However a pivotal moment was to be traced when a decision was taken in the form of the ESPRIT (European Strategic Program on Research and Information Technology) and the "additional budget" was agreed upon. [1]

The first framework program (1984-1987) was adapted for community research, technological development and demonstration activities. It should enhance balanced scientific research and technological development. According to the principle of subsidiarity the research is pursued if it offers advantages over the national endeavor. During the second framework program (1987-1991) the ICT department got 40 percent of the total budget. Industry and materials almost double their part. New programs, such as support for SMEs and international cooperation emerge.

During the unfolding of the third framework program (1990-1994) the share of the ICT decreases by the five percent compared to FP2. Energy funding keeps dropping and the life sciences (health and food) increase in financial contribution. It is subdivided into four thematic programs enabling technologies:

"Management of Natural Resources" (environment,

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energy and life sciences), "Management of Intellectual Resources" (fellowships and mobility), "Centralized Action for the Dissemination" and "Exploitation of Knowledge" resulting from the specific programs.

The fourth framework program (1994-1998) is an advancement compared to its predecessor. In addition to the third, three horizontal programs are added: international cooperation; dissemination and exploitation of results; stimulation of the training and mobility of researchers. All programs are launched at the same time, which is a new thing.

The fifth framework program targeted the priorities for the E.U.'s research, technological development and demonstration. It differs from its predecessors in the fact that it proposes to deal with the socio-economic challenges (IST-second activity, GROWTH-third activity).[2] The first activity focuses on quality of life and management of living resources, user friendly information society, competitive and sustainable growth, energy, environment and sustainable growth, energy, environment and sustainable development. Thus there were established four key actions: innovative products, processes and organization, sustainable mobility and intermodality, land transport and marine technologies.

The program structure was based on three main interconnected elements: critical technologies, concepts and policies to solve clearly identified problems, research and technological development activities of a generic nature, support for research infrastructures. The SMAIM ("Sustainable mobility and intermodality") is responsible of a regulatory and accountable framework reflecting socio-economic objectives, an interoperable infrastructure which allows the operation of attractive, environmentally friendly and effective transport means, modal and intermodal systems for managing operations and providing services.

The LTAMT ("Land transport and marine technologies") focuses on the development of critical technologies and their integration and validation around advanced industrial concepts in order to attain the following main deliverables: improved fuel efficiency and reduction of emissions; improved performance and improved system competitiveness.

Main examples of the running projects that were of interest so far among others are:

ECBOS (enhanced coach and bus occupant safety), IMMORTAL (impaired motorists, methods of roadside, testing and assessment for licensing), PENDANT, VIRTUAL, VITES, SAVE TUNNEL, VC COMPACT, CHILD, E-MERGE, SAVE-U.

The FP6 (2002-2006) is differently structured than FP5 as horizontal activities are intended to structure the ERA. EUROATOM is among the main activities and regarded as a separate program component. Two specific instruments emerge: Integrated Projects and Networks of Excellence. Integrated projects are major endeavors comprised of various groups. The two instruments are aimed at sustainably integrating the research capacities of partners within a joint program of activity. Researchers were paid directly by the commission and not by the confederation any more.

The FP7 (2007-2013) is linked to the E.U.'s overall budget planning and intended to make Europe the most competitive and dynamic knowledge-based economy. Fundamental and fusion research was favored to cover construction of the International Thermonuclear Experimental Reactor (ITER). The ERE-NETs were formed and were aimed at building a lasting transnational program to support R&D projects and Joint Program Initiatives (JPIS). Furthermore technology platforms are turned in JTI. Public private partnerships are established.

The FP8 introduces FET (Future and Emerging Technologies), flagships which are based on the principle of matching funds and funding may thus be sourced from member states, associated countries and the private sector. The RISK Finance Program (3,7%) and the KIC (Knowledge and Innovation Communities) are to come as additional help for potential entrepreneurs."[3]

The fact that the E.U. must change its strategic plan in order to survive and become more innovative is a ubiquitous acceptance and acknowledgement. Thus, other than just build upon its main strategies, i.e. the internal market, free mobility inside the E.U. borders it found some new ways of improving its infrastructure and thus its economy by setting at least five ambitious targets, that are to be accomplished by the end of 2020. Hence, it is a predicament for these to be achieved, unless we don't want to experience another major crisis. Therefore, by the end of 2020 we should reach a seventy five % of employment within the age interval of twenty to sixty-four years. Three % of the GDP should be allocated to research and development. There should be twenty or even thirty percent less CO2 gas emissions compared to 1990. Twenty % more energy should come from renewable resources and twenty % more energy efficiency. Less than ten % school droppers ought to be registered while minimum forty % of those aged between the years 30-40 should obtain tertiary graduation. And last but not least 20 Million people are to be less affected by poverty or social exclusion. Nonetheless each E.U. country defined its own country specific targets in all these domains. Thus the main fields are established upon which seven so called "lead initiatives" are addressed:

The "Innovation Union" should correct the conditions and the access to financial sources for research and innovation so that innovative ideas can be materialized in the form of growth- and employment effective products and services.[4]

"Youth on the Move", is a program that is to make our education systems more performing, to ease up the access of the youngsters to the labor market.

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"A digital Agenda for Europe" is a means for the build up of high speed internet and the worldwide spreading of information and communication technologies.

"A Resource friendly Europe" should contribute to separate economic growth from the consuming of resources. It supports the transit to CO2 poor economy, the introduction of green technologies and of a modern transport system as well as energy efficiency.

"An Industry Policy" for the age of globalization should improve the business environment i.e. via a better access to credits and via a reduction of birocratism. It supports the build up of a strong and resistant industrial basis to innovate on a global level and to affirm itself in the competition.

"An Agenda for new skills and employment possibilities"[5] should modernize the labor markets and help the people to develop their abilities to improve the flexibility and security at the work place. It acts as a bridge between the employer and the job seeker.

"The European Platform for the Fight of Poverty" represents a platform that offers social and territorial cohesion enabling thus the active access of poor people to the labor market and the integration in society.[6]

So far there was registered a full success in the research department, most of all people could thus control their eating habits by being more health conscientious. Moreover, they can speak directly to different doctors via the internet and by asking online direct questions that concern them. Intense cooperation between the public and the private sector in the form of private-public partnerships is sought and promoted: "PPPs will equally be sought, for research and innovation agendas which are of strategic importance to EU competitiveness and to address societal challenges, including in the bioeconomy. Commission services are exploring the possibilities for establishing a PPP on bio-based industries."[7]

As the commission plays a crucial role in this endeavor people are determined to trust its commitment to rise up to the expectation.

Conclusion

The framework programs through their huge financial support prove to boost thus the E.U. economy and to foster innovation. The Union is to become eventually one of the most competitive international organizations in the world among other blooming economies. It is a unique and tremendous chance, its citizens should become aware of, and they should even try to overcome any border mentalities and other kind of limitations and bring their own input at the build up of a greater future based on hard work and solidarity.

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Notes:

1. see further reference in the "Horizon Magazine 30 years EU Research Framework Programmes 1984-2014.
2. see European Commission, Research Projects and Studies 2011-2008. A Background document for the preparation of the strategic guidelines for road safety up to 2020, Luxembourg, Publications Office of the E.U., 2010, p.8-23.
3. The presentation of the programs is supposed to shed light on the basic opportunities of research at the end of the twentieth century and the onset of the third millennium: SERI. (State Secretariat for Education, Research and Innovation) article found at the web address http: //www.Sbfi.admin.ch/themen/01370/01683/02092, accessed on the 13 of October 2015.
4. For further reference see Europa 2020 Europas Wachstumstrategie, p. 3-4
5. Idem
6. n. b. The latest results in food research made people more awareof what they ate and avoid food that caused the spreading of diseases and provoked a major discomfort for them e.g. the development of carcinogenes and acrylamids in overheated and overcooked (toast) bread and potatoes
7. see European Commission, Innovating for Sustainable Growth, Luxembourg, Publications Office of the E.U., 2012, p.24.

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