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**CONCEPTUAL AND LEGAL BASIS
OF INNOVATIONS
IN HIGHER EDUCATION**

Study manual-anthology

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Anthology is a part of educational and methodical complex of publications developed by ER Institute of European Integration Studies of UzhNU within implementation of the research project "Innovative university – tool of integration to European educational and research area".

Are presented and commented normative and legal documents regarding the formation of a single European educational and scientific area, innovative activities of Ukraine's higher education institutions, its infrastructure provision.

Reveals legal regulation in the commercialization of scientific and research and development work, substantiated principles of science parks activity as an important mechanism for the implementation of scientific research results, disclosed actual aspects of the EU program "Horizon 2020", the strategic direction of scientific development in the European educational area.

The publication is dedicated to the 70th anniversary of the SU "Uzhhorod National University".

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FOREWORD

The proposed publication “Conceptual and legal basis of innovations in higher education” selected and chronologically arranged basic documents that are a fundamental legal providing of innovative activity in higher education institutions in context of the common European educational area.

Particularly important in this context is to develop the legislative framework that should ensure regulation of the state not only as a subject of international relations, and subject to the conditions of its internal position corresponding to the dynamics of its change, situational influence on the course of events in the country.

In modern system of higher education there are enough educational and methodological literature on various issues of Ukraine integration to European educational and scientific area, highlighting the specificity of these processes in different industries. **But while the scope of legal support for innovations in higher education of Ukraine is not enough presented in the educational and methodological literature.**

After the signing of the Association Agreement between Ukraine and the European Union, the adoption of the new Law of Ukraine “On Higher Education”, the strategic objective of high school has become an innovative paradigm of its development in terms of internationalization of educational area.

Uzhhorod National University is actively working on developing effective Concept of innovative development. Educational and Research Institute of European Integration Studies implemented research project “Innovative university – tool of integration to European educational and research area” with the financial support of the International Visegrad Fund.

The proposed manual-anthology is an attempt to fill the gap formed in the existing, significant for the breadth of coverage and multilateral of given issues, educational and methodological

support of the preparation process of knowledgeable specialists with the complexities that exist in foreign and domestic policy of Ukraine towards integration of national higher education to European educational and scientific area.

According to the main provisions of the Law of Ukraine «On Higher Education», it is not about a copy of the European standard of education, but on the development of best national experience in the organization of high school with the borrowing of a well-proven in most European countries new forms and methods of operation of higher education in the formation of a single educational area.

Given that any legislative process is quite dynamic, the proposed study manual is designed as anthology, main goal of which is to improve education by some degree holistic and comprehensive presentation of complex and disparate material. We hope that the proposed manual-anthology will be useful for students, postgraduate students, organizers and managers of higher education in their practical work and will increase the level of training in higher education institutions of Ukraine on the basis of the best national and international experience accumulated in the formation of a single European educational area.

PART 1

CONCEPTUAL ASPECTS IN FORMATION OF A SINGLE EUROPEAN EDUCATIONAL AREA

Sorbonne Declaration

(Joint Declaration On Harmonisation Of The Architecture Of The European Higher Education System) by the four Ministers in charge for France, Germany, Italy and the United Kingdom [9] Paris, the Sorbonne, May 25 1998

The European process has very recently moved some extremely important steps ahead. Relevant as they are, they should not make one forget that Europe is not only that of the Euro, of the banks and the economy: it must be a Europe of knowledge as well. We must strengthen and build upon the intellectual, cultural, social and technical dimensions of our continent. These have to a large extent been shaped by its universities, which continue to play a pivotal role for their development.

Universities were born in Europe, some three-quarters of a millenium ago. Our four countries boast some of the oldest, who are celebrating important anniversaries around now, as the University of Paris is doing today. In those times, students and academics would freely circulate and rapidly disseminate knowledge throughout the continent. Nowadays, too many of our students still graduate without having had the benefit of a study period outside of national boundaries.

We are heading for a period of major change in education and working conditions, to a diversification of courses of professional careers with education and training throughout life becoming a

clear obligation. We owe our students, and our society at large, a higher education system in which they are given the best opportunities to seek and find their own area of excellence.

An open European area for higher learning carries a wealth of positive perspectives, of course respecting our diversities, but requires on the other hand continuous efforts to remove barriers and to develop a framework for teaching and learning, which would enhance mobility and an ever closer cooperation.

The international recognition and attractive potential of our systems are directly related to their external and internal readabilities. A system, in which two main cycles, undergraduate and graduate, should be recognized for international comparison and equivalence, seems to emerge.

Much of the originality and flexibility in this system will be achieved through the use of credits (such as in the ECTS scheme) and semesters. This will allow for validation of these acquired credits for those who choose initial or continued education in different European universities and wish to be able to acquire degrees in due time throughout life. Indeed, students should be able to enter the academic world at any time in their professional life and from diverse backgrounds.

Undergraduates should have access to a diversity of programmes, including opportunities for multidisciplinary studies, development of a proficiency in languages and the ability to use new information technologies.

International recognition of the first cycle degree as an appropriate level of qualification is important for the success of this endeavour, in which we wish to make our higher education schemes clear to all.

In the graduate cycle there would be a choice between a shorter master's degree and a longer doctor's degree, with possibilities to transfer from one to the other. In both graduate degrees, appropriate emphasis would be placed on research and autonomous work.

At both undergraduate and graduate level, students would be encouraged to spend at least one semester in universities outside their own country. At the same time, more teaching and research staff should be working in European countries other than

their own. The fast growing support of the European Union, for the mobility of students and teachers should be employed to the full.

Most countries, not only within Europe, have become fully conscious of the need to foster such evolution. The conferences of European rectors, University presidents, and groups of experts and academics in our respective countries have engaged in wide-spread thinking along these lines.

A convention, recognising higher education qualifications in the academic field within Europe, was agreed on last year in Lisbon. The convention set a number of basic requirements and acknowledged that individual countries could engage in an even more constructive scheme. Standing by these conclusions, one can build on them and go further. There is already much common ground for the mutual recognition of higher education degrees for professional purposes through the respective directives of the European Union.

Our governments, nevertheless, continue to have a significant role to play to these ends, by encouraging ways in which acquired knowledge can be validated and respective degrees can be better recognised. We expect this to promote further inter-university agreements. Progressive harmonisation of the overall framework of our degrees and cycles can be achieved through strengthening of already existing experience, joint diplomas, pilot initiatives, and dialogue with all concerned.

We hereby commit ourselves to encouraging a common frame of reference, aimed at improving external recognition and facilitating student mobility as well as employability. The anniversary of the University of Paris, today here in the Sorbonne, offers us a solemn opportunity to engage in the endeavour to create a European area of higher education, where national identities and common interests can interact and strengthen each other for the benefit of Europe, of its students, and more generally of its citizens. We call on other Member States of the Union and other European countries to join us in this objective and on all European Universities to consolidate Europe's standing in the world through continuously improved and updated education for its citizens.

The Bologna Declaration of 19 June 1999

Joint Declaration of the European Ministers of Education [10]

The European process, thanks to the extraordinary achievements of the last few years, has become an increasingly concrete and relevant reality for the Union and its citizens. Enlargement prospects together with deepening relations with other European countries, provide even wider dimensions to that reality. Meanwhile, we are witnessing a growing awareness in large parts of the political and academic world and in public opinion of the need to establish a more complete and far-reaching Europe, in particular building upon and strengthening its intellectual, cultural, social and scientific and technological dimensions.

A Europe of Knowledge is now widely recognised as an irreplaceable factor for social and human growth and as an indispensable component to consolidate and enrich the European citizenship, capable of giving its citizens the necessary competencies to face the challenges of the new millennium, together with an awareness of shared values and belonging to a common social and cultural space. The importance of education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies is universally acknowledged as paramount, the more so in view of the situation in South East Europe.

The Sorbonne declaration of 25th of May 1998, which was underpinned by these considerations, stressed the Universities' central role in developing European cultural dimensions. It emphasised the creation of the European area of higher education as a key way to promote citizens' mobility and employability and the Continent's overall development. Several European countries have accepted the invitation to commit themselves to achieving the objectives set out in the declaration, by signing it or expressing their agreement in principle. The direction taken by several higher education reforms launched in the meantime in Europe has proved many Governments' determination to act.

European higher education institutions, for their part, have accepted the challenge and taken up a main role in constructing the European area of higher education, also in the wake of the

fundamental principles laid down in the Bologna Magna Charta Universitatum of 1988. This is of the highest importance, given that Universities' independence and autonomy ensure that higher education and research systems continuously adapt to changing needs, society's demands and advances in scientific knowledge. The course has been set in the right direction and with meaningful purpose. The achievement of greater compatibility and comparability of the systems of higher education nevertheless requires continual momentum in order to be fully accomplished. We need to support it through promoting concrete measures to achieve tangible forward steps. The 18th June meeting saw participation by authoritative experts and scholars from all our countries and provides us with very useful suggestions on the initiatives to be taken. We must in particular look at the objective of increasing the international competitiveness of the European system of higher education. The vitality and efficiency of any civilisation can be measured by the appeal that its culture has for other countries. We need to ensure that the European higher education system acquires a world-wide degree of attraction equal to our extraordinary cultural and scientific traditions.

While affirming our support to the general principles laid down in the Sorbonne declaration, we engage in co-ordinating our policies to reach in the short term, and in any case within the first decade of the third millennium, the following objectives, which we consider to be of primary relevance in order to establish the European area of higher education and to promote the European system of higher education world-wide:

- Adoption of a system of easily readable and comparable degrees, also through the implementation of the Diploma Supplement, in order to promote European citizens employability and the international competitiveness of the European higher education system.
- Adoption of a system essentially based on two main cycles, undergraduate and graduate. Access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years. The degree awarded after the first cycle shall also be relevant to the European labour market as an appropriate level of quali-

fication. The second cycle should lead to the master and/ or doctorate degree as in many European countries.

- Establishment of a system of credits - such as in the ECTS system - as a proper means of promoting the most widespread student mobility. Credits could also be acquired in non-higher education contexts, including lifelong learning, provided they are recognised by receiving Universities concerned.
- Promotion of mobility by overcoming obstacles to the effective exercise of free movement with particular attention to:
 - for students, access to study and training opportunities and to related services,
 - for teachers, researchers and administrative staff: recognition and valorisation of periods spent in a European context researching, teaching and training, without prejudicing their statutory rights.
- Promotion of European co-operation in quality assurance with a view to developing comparable criteria and methodologies.
- Promotion of the necessary European dimensions in higher education, particularly with regards to curricular development, inter-institutional co-operation, mobility schemes and integrated programmes of study, training and research.

We hereby undertake to attain these objectives - within the framework of our institutional competencies and taking full respect of the diversity of cultures, languages, national education systems and of University autonomy - to consolidate the European area of higher education. To that end, we will pursue the ways of intergovernmental co-operation, together with those of non-governmental European organisations with competence on higher education. We expect Universities again to respond promptly and positively and to contribute actively to the success of our endeavour. Convinced that the establishment of the European area of higher education requires constant support, supervision and adaptation to the continuously evolving needs, we decide to meet again within two years in order to assess the progress achieved and the new steps to be taken.

Convention of European Higher Education Institutions

(Salamanca, 29-30 March 2001) [7]

Shaping the European Higher Education Area

Over 300 European higher education institutions and their main representative organisations gathered in Salamanca on 29-30 March 2001. Their purpose was to prepare their input to the Prague meeting of the Ministers in charge of higher education in the countries involved in the Bologna process; they have agreed on the following goals, principles and priorities:

Shaping the future

European higher education institutions reaffirm their support to the principles of the Bologna Declaration and their commitment to the creation of the European Higher Education Area by the end of the decade. They see the establishing of the European University Association (EUA) in Salamanca to be of both symbolic and practical value in conveying their voice more effectively to governments and society and thus in supporting them shape their own future in the European Higher Education Area.

I. Principles

Autonomy with accountability

Progress requires that European universities be empowered to act in line with the guiding principle of autonomy with accountability. As autonomous and responsible legal, educational and social entities, they confirm their adhesion to the principles of the *Magna Charta Universitatum* of 1988 and, in particular, to that of academic freedom. Thus, universities must be able to shape their strategies, choose their priorities in teaching and research, allocate their resources, profile their curricula and set their criteria for the acceptance of professors and students. European higher education institutions accept the challenges of operating in a competitive environment at home, in Europe and in the world, but to do so they need the necessary managerial freedom, light and supportive regulatory frameworks and fair financing, or they will be placed at a disadvantage in co-operation and competition. The dynamics needed for the completion of the European Higher Education Area will remain unfulfilled or will result in unequal competition, if the

current over -regulation and minute administrative and financial control of higher education in many countries is upheld.

Competition serves quality in higher education, is not exclusive of co-operation and cannot be reduced to a commercial concept. Universities in some countries in Europe are not yet in a position to compete on equal terms and are in particular faced with unwanted brain drain within Europe.

Education as a public responsibility

The European Higher Education Area must be built on the European traditions of education as a public responsibility; of broad and open access to undergraduate as well as graduate studies; of education for personal development and lifelong learning; and of citizenship as well as of short and long-term social relevance.

Research-based higher education

As research is a driving force of higher education, the creation of the European Higher Education Area must go hand in hand with that of the European Research Area.

Organising diversity

European higher education is characterised by its diversity in terms of languages, national systems, institutional types and profiles and curricular orientation. At the same time its future depends on its ability to organise this valuable diversity effectively to produce positive outcomes rather than difficulties, and flexibility rather than opacity. Higher education institutions wish to build on convergence - in particular on common denominators shared across borders in a given subject area - and to deal with diversity as an asset, rather than as a reason for non-recognition or exclusion. They are committed to creating sufficient self-regulation in order to ensure the minimum level of cohesion so that their efforts towards compatibility are not undermined by too much variance in the definition and implementation of credits, main degree categories and quality criteria.

II. Key issues

Quality as a fundamental building stone

The European Higher Education Area needs to build on academic core values while meeting stakeholders' expectations, i.e., demonstrating quality. Indeed, quality assessment must take

into consideration the goals and mission of institutions and programmes. It requires a balance between innovation and tradition, academic excellence and social/economic relevance, the coherence of curricula and students' freedom of choice. It encompasses teaching and research as well as governance and administration, responsiveness to students' needs and the provision of non-educational services. Inherent quality does not suffice, it needs to be demonstrated and guaranteed in order to be acknowledged and trusted by students, partners and society at home, in Europe and in the world.

Quality is the basic underlying condition for trust, relevance, mobility, compatibility and attractiveness in the European Higher Education Area

Trust building

As research evaluation has an international dimension so does quality assurance in higher education. In Europe, quality assurance should not be based on a single agency enforcing a common set of standards. The way into the future will be to design mechanisms at European level for the mutual acceptance of quality assurance outcomes, with "accreditation" as one possible option. Such mechanisms should respect national, linguistic and discipline differences and not overload universities.

Relevance

Relevance to the European labour market needs to be reflected in different ways in curricula, depending on whether the competencies acquired are for employment after the first or the second degree. Employability in a lifelong learning perspective is best served through the inherent value of quality education, the diversity of approaches and course profiles, the flexibility of programmes with multiple entry and exit points and the development of transversal skills and competencies such as communication and languages, ability to mobilise knowledge, problem solving, team work and social processes.

Mobility

The free mobility of students, staff and graduates is an essential dimension of the European Higher Education Area. European universities want to foster more mobility - both of the "horizon-

tal” and the “vertical” type - and do not see virtual mobility as a substitute for physical mobility. They are willing to use existing instruments for recognition and mobility (ECTS, Lisbon Convention, Diploma Supplement, NARIC/ENIC network) in a positive and flexible way. In view of the importance of teaching staff with European experience, universities wish to eliminate nationality requirements and other obstacles and disincentives for academic careers in Europe. However, a common European approach to virtual mobility and transnational education is also needed.

Compatible qualifications at the undergraduate and graduate levels

Higher education institutions endorse the move towards a compatible qualification framework based on a main articulation in undergraduate and postgraduate studies. There is broad agreement that first degrees should require 180 to 240 ECTS points but need to be diverse leading to employment or mainly preparing for further, postgraduate studies. Under certain circumstances a university may decide to establish an integrated curriculum leading directly to a Master-level degree. Subject-based networks have an important role to play in reaching such decisions. Universities are convinced of the benefits of a credit accumulation and transfer system based on ECTS and on their basic right to decide on the acceptability of credits obtained elsewhere.

Attractiveness

European higher education institutions want to be in a position to attract talent from all over the world. This requires action at institutional, national and European levels. Specific measures include the adaptation of curricula, degrees readable inside and outside Europe, credible quality assurance measures, programmes taught in major world languages, adequate information and marketing, welcoming services for foreign students and scholars, and strategic networking. Success also depends on the speedy removal of prohibitive immigration and labour market regulations.

European higher education institutions recognise that their students need and demand qualifications which they can use effectively for the purpose of their studies and careers all over Europe. The institutions and their networks and organisations acknowledge their role and responsibil-

ity in this regard, and confirm their willingness to organise themselves accordingly within the framework of autonomy.

Higher education institutions call on governments, in their national and European contexts, to facilitate and encourage change and to provide a framework for co-ordination and guidance towards convergence. They affirm their capacity and willingness to initiate and support progress within a joint endeavour

1. to redefine higher education and research for the whole of Europe;
2. to reform and rejuvenate curricula and higher education as a whole;
3. to enhance and build on the research dimension in higher education;
4. to adopt mutually acceptable mechanisms for the evaluation, assurance and certification of quality;
5. to build on common denominators with a European dimension and ensure compatibility between diverse institutions, curricula and degrees;
6. to promote the mobility of students and staff and the employability of graduates in Europe;
7. to support the modernisation efforts of universities in countries where the challenges of the European Higher Education Area are greatest;
8. to meet the challenges of being readable, attractive and competitive at home, in Europe and in the world; and
9. to continue to consider higher education as an essential public responsibility.

Communiqué of the Meeting of the European Ministers

*in Charge of Higher Education
Prague, 19 May 2001 [4]*

Two years after signing the Bologna Declaration and three years after the Sorbonne Declaration, European Ministers in charge of higher education, representing 32 signatories, met in Prague in order to review the progress achieved and to set directions and

priorities for the coming years of the process. Ministers reaffirmed their commitment to the objective of establishing the European Higher Education Area by 2010. The choice of Prague to hold this meeting is a symbol of their will to involve the whole of Europe in the process in the light of enlargement of the European Union.

Ministers welcomed and reviewed the report «Furthering the Bologna Process» commissioned by the follow-up group and found that the goals laid down in the Bologna Declaration have been widely accepted and used as a base for the development of higher education by most signatories as well as by universities and other higher education institutions. Ministers reaffirmed that efforts to promote mobility must be continued to enable students, teachers, researchers and administrative staff to benefit from the richness of the European Higher Education Area including its democratic values, diversity of cultures and languages and the diversity of the higher education systems.

Ministers took note of the Convention of European higher education institutions held in Salamanca on 29-30 March and the recommendations of the Convention of European Students, held in Göteborg on 24-25 March, and appreciated the active involvement of the European University Association (EUA) and the National Unions of Students in Europe (ESIB) in the Bologna process. They further noted and appreciated the many other initiatives to take the process further. Ministers also took note of the constructive assistance of the European Commission.

Ministers observed that the activities recommended in the Declaration concerning degree structure have been intensely and widely dealt with in most countries. They especially appreciated how the work on quality assurance is moving forward. Ministers recognized the need to cooperate to address the challenges brought about by transnational education. They also recognized the need for a lifelong learning perspective on education.

1. FURTHER ACTIONS FOLLOWING THE SIX OBJECTIVES OF THE BOLOGNA PROCESS

As the Bologna Declaration sets out, Ministers asserted that building the European Higher Education Area is a condition for enhancing the attractiveness and competitiveness of higher educa-

tion institutions in Europe. They supported the idea that higher education should be considered a public good and is and will remain a public responsibility (regulations etc.), and that students are full members of the higher education community. From this point of view Ministers commented on the further process as follows:

Adoption of a system of easily readable and comparable degrees

Ministers strongly encouraged universities and other higher education institutions to take full advantage of existing national legislation and European tools aimed at facilitating academic and professional recognition of course units, degrees and other awards, so that citizens can effectively use their qualifications, competencies and skills throughout the European Higher Education Area.

Ministers called upon existing organisations and networks such as NARIC and ENIC to promote, at institutional, national and European level, simple, efficient and fair recognition reflecting the underlying diversity of qualifications.

Adoption of a system essentially based on two main cycles

Ministers noted with satisfaction that the objective of a degree structure based on two main cycles, articulating higher education in undergraduate and graduate studies, has been tackled and discussed. Some countries have already adopted this structure and several others are considering it with great interest. It is important to note that in many countries bachelor's and master's degrees, or comparable two cycle degrees, can be obtained at universities as well as at other higher education institutions. Programmes leading to a degree may, and indeed should, have different orientations and various profiles in order to accommodate a diversity of individual, academic and labour market needs as concluded at the Helsinki seminar on bachelor level degrees (February 2001).

Establishment of a system of credits

Ministers emphasized that for greater flexibility in learning and qualification processes the adoption of common cornerstones of qualifications, supported by a credit system such as the ECTS or one that is ECTS-compatible, providing both transferability and accumulation functions, is necessary. Together with mutually recognized quality assurance systems such arrangements will facili-

tate students' access to the European labour market and enhance the compatibility, attractiveness and competitiveness of European higher education. The generalized use of such a credit system and of the Diploma Supplement will foster progress in this direction.

Promotion of mobility

Ministers reaffirmed that the objective of improving the mobility of students, teachers, researchers and administrative staff as set out in the Bologna Declaration is of the utmost importance. Therefore, they confirmed their commitment to pursue the removal of all obstacles to the free movement of students, teachers, researchers and administrative staff and emphasized the social dimension of mobility. They took note of the possibilities for mobility offered by the European Community programmes and the progress achieved in this field, e.g. in launching the Mobility Action Plan endorsed by the European Council in Nice in 2000.

Promotion of European cooperation in quality assurance

Ministers recognized the vital role that quality assurance systems play in ensuring high quality standards and in facilitating the comparability of qualifications throughout Europe. They also encouraged closer cooperation between recognition and quality assurance networks. They emphasized the necessity of close European cooperation and mutual trust in and acceptance of national quality assurance systems. Further they encouraged universities and other higher education institutions to disseminate examples of best practice and to design scenarios for mutual acceptance of evaluation and accreditation/certification mechanisms. Ministers called upon the universities and other higher education institutions, national agencies and the European Network of Quality Assurance in Higher Education (ENQA), in cooperation with corresponding bodies from countries which are not members of ENQA, to collaborate in establishing a common framework of reference and to disseminate best practice.

Promotion of the European dimensions in higher education

In order to further strengthen the important European dimensions of higher education and graduate employability Ministers called upon the higher education sector to increase the

development of modules, courses and curricula at all levels with «European» content, orientation or organisation. This concerns particularly modules, courses and degree curricula offered in partnership by institutions from different countries and leading to a recognized joint degree.

II. FURTHERMORE MINISTERS EMPHASIZED THE FOLLOWING POINTS:

Lifelong learning

Lifelong learning is an essential element of the European Higher Education Area. In the future Europe, built upon a knowledge-based society and economy, lifelong learning strategies are necessary to face the challenges of competitiveness and the use of new technologies and to improve social cohesion, equal opportunities and the quality of life.

Higher education institutions and students

Ministers stressed that the involvement of universities and other higher education institutions and of students as competent, active and constructive partners in the establishment and shaping of a European Higher Education Area is needed and welcomed. The institutions have demonstrated the importance they attach to the creation of a compatible and efficient, yet diversified and adaptable European Higher Education Area. Ministers also pointed out that quality is the basic underlying condition for trust, relevance, mobility, compatibility and attractiveness in the European Higher Education Area. Ministers expressed their appreciation of the contributions toward developing study programmes combining academic quality with relevance to lasting employability and called for a continued proactive role of higher education institutions.

Ministers affirmed that students should participate in and influence the organisation and content of education at universities and other higher education institutions. Ministers also reaffirmed the need, recalled by students, to take account of the social dimension in the Bologna process.

Promoting the attractiveness of the European Higher Education Area

Ministers agreed on the importance of enhancing attractiveness of European higher education to students from Europe and

other parts of the world. The readability and comparability of European higher education degrees world-wide should be enhanced by the development of a common framework of qualifications, as well as by coherent quality assurance and accreditation/certification mechanisms and by increased information efforts.

Ministers particularly stressed that the quality of higher education and research is and should be an important determinant of Europe's international attractiveness and competitiveness. Ministers agreed that more attention should be paid to the benefit of a European Higher Education Area with institutions and programmes with different profiles. They called for increased collaboration between the European countries concerning the possible implications and perspectives of transnational education.

III. CONTINUED FOLLOW-UP

Ministers committed themselves to continue their cooperation based on the objectives set out in the Bologna Declaration, building on the similarities and benefiting from the differences between cultures, languages and national systems, and drawing on all possibilities of intergovernmental cooperation and the ongoing dialogue with European universities and other higher education institutions and student organisations as well as the Community programmes.

Ministers welcomed new members to join the Bologna process after applications from Ministers representing countries for which the European Community programmes Socrates and Leonardo da Vinci or Tempus-Cards are open. They accepted applications from Croatia, Cyprus and Turkey.

Ministers decided that a new follow-up meeting would take place in the second half of 2003 in Berlin to review progress and set directions and priorities for the next stages of the process towards the European Higher Education Area. They confirmed the need for a structure for the follow-up work, consisting of a follow-up group and a preparatory group. The follow-up group should be composed of representatives of all signatories, new participants and the European Commission, and should be chaired by the EU Presidency at the time. The preparatory group should be composed of representatives of the countries hosting the previ-

ous ministerial meetings and the next ministerial meeting, two EU member states and two non-EU member states; these latter four representatives will be elected by the follow-up group. The EU Presidency at the time and the European Commission will also be part of the preparatory group. The preparatory group will be chaired by the representative of the country hosting the next ministerial meeting.

The European University Association, the European Association of Institutions in Higher Education (EURASHE), the National Unions of Students in Europe and the Council of Europe should be consulted in the follow-up work.

In order to take the process further, Ministers encouraged the follow-up group to arrange seminars to explore the following areas: cooperation concerning accreditation and quality assurance, recognition issues and the use of credits in the Bologna process, the development of joint degrees, the social dimension, with specific attention to obstacles to mobility, and the enlargement of the Bologna process, lifelong learning and student involvement.

Communiqué of the Conference of Ministers responsible for Higher Education

Berlin, 19 September 2003 [3]

Preamble

On 19 June 1999, one year after the Sorbonne Declaration, Ministers responsible for higher education from 29 European countries signed the Bologna Declaration. They agreed on important joint objectives for the development of a coherent and cohesive European Higher Education Area by 2010. In the first follow-up conference held in Prague on 19 May 2001, they increased the number of the objectives and reaffirmed their commitment to establish the European Higher Education Area by 2010. On 19 September 2003, Ministers responsible for higher education from 33 European countries met in Berlin in order to review the progress achieved and to set priorities and new objectives for the coming years, with a view to speeding up the realisation of the European

Higher Education Area. They agreed on the following considerations, principles and priorities:

Ministers reaffirm the importance of the social dimension of the Bologna Process. The need to increase competitiveness must be balanced with the objective of improving the social characteristics of the European Higher Education Area, aiming at strengthening social and gender cohesion and reducing social inequalities both at national and at European level. In that context, Ministers reaffirm their position that higher education is a public good and a public responsibility. They emphasize that in international academic co-operation and exchanges, academic values should prevail.

Ministers take into due consideration the conclusions of the European Councils in Lisbon (2000) and Barcelona (2002) aimed at making Europe „the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion“ and calling for further action and closer co-operation in the context of the Bologna Process.

Ministers take note of the Progress Report commissioned by the Follow-up Group on the development of the Bologna Process between Prague and Berlin. They also take note of the Trends-III Report prepared by the European University Association (EUA), as well as of the results of the seminars, which were organised as part of the work programme between Prague and Berlin by several member States and Higher Education Institutions, organisations and students. Ministers further note the National Reports, which are evidence of the considerable progress being made in the application of the principles of the Bologna Process. Finally, they take note of the messages from the European Commission and the Council of Europe and acknowledge their support for the implementation of the Process.

Ministers agree that efforts shall be undertaken in order to secure closer links overall between the higher education and research systems in their respective countries. The emerging European Higher Education Area will benefit from synergies with the European Research Area, thus strengthening the basis of the Europe of Knowledge. The aim is to preserve Europe’s cultural richness and linguistic diversity, based on its heritage of diversified

traditions, and to foster its potential of innovation and social and economic development through enhanced co-operation among European Higher Education Institutions.

Ministers recognise the fundamental role in the development of the European Higher Education Area played by Higher Education Institutions and student organisations. They take note of the message from the European University Association (EUA) arising from the Graz Convention of Higher Education Institutions, the contributions from the European Association of Institutions in Higher Education (EURASHE) and the communications from ESIB - the National Unions of Students in Europe. Ministers welcome the interest shown by other regions of the world in the development of the European Higher Education Area, and welcome in particular the presence of representatives from European countries not yet party to the Bologna Process as well as from the Follow-up Committee of the European Union, Latin America and Caribbean (EULAC) Common Space for Higher Education as guests at this conference.

Progress

Ministers welcome the various initiatives undertaken since the Prague Higher Education Summit to move towards more comparability and compatibility, to make higher education systems more transparent and to enhance the quality of European higher education at institutional and national levels. They appreciate the co-operation and commitment of all partners - Higher Education Institutions, students and other stakeholders - to this effect.

Ministers emphasise the importance of all elements of the Bologna Process for establishing the European Higher Education Area and stress the need to intensify the efforts at institutional, national and European level. However, to give the Process further momentum, they commit themselves to intermediate priorities for the next two years. They will strengthen their efforts to promote effective quality assurance systems, to step up effective use of the system based on two cycles and to improve the recognition system of degrees and periods of studies.

Quality Assurance

The quality of higher education has proven to be at the heart of the setting up of a European Higher Education Area. Ministers

commit themselves to supporting further development of quality assurance at institutional, national and European level. They stress the need to develop mutually shared criteria and methodologies on quality assurance.

They also stress that consistent with the principle of institutional autonomy, the primary responsibility for quality assurance in higher education lies with each institution itself and this provides the basis for real accountability of the academic system within the national quality framework.

Therefore, they agree that by 2005 national quality assurance systems should include:

- A definition of the responsibilities of the bodies and institutions involved.

- Evaluation of programmes or institutions, including internal assessment, external review, participation of students and the publication of results.

- A system of accreditation, certification or comparable procedures. International participation, co-operation and networking.

At the European level, Ministers call upon ENQA through its members, in cooperation with the EUA, EURASHE and ESIB, to develop an agreed set of standards, procedures and guidelines on quality assurance, to explore ways of ensuring an adequate peer review system for quality assurance and/or accreditation agencies or bodies, and to report back through the Follow-up Group to Ministers in 2005. Due account will be taken of the expertise of other quality assurance associations and networks.

Degree structure: Adoption of a system essentially based on two main cycles

Ministers are pleased to note that, following their commitment in the Bologna Declaration to the two-cycle system, a comprehensive restructuring of the European landscape of higher education is now under way. All Ministers commit themselves to having started the implementation of the two cycle system by 2005.

Ministers underline the importance of consolidating the progress made, and of improving understanding and acceptance of the new qualifications through reinforcing dialogue within institutions and between institutions and employers. Ministers

encourage the member States to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile. They also undertake to elaborate an overarching framework of qualifications for the European Higher Education Area.

Within such frameworks, degrees should have different defined outcomes. First and second cycle degrees should have different orientations and various profiles in order to accommodate a diversity of individual, academic and labour market needs. First cycle degrees should give access, in the sense of the Lisbon Recognition Convention, to second cycle programmes. Second cycle degrees should give access to doctoral studies.

Ministers invite the Follow-up Group to explore whether and how shorter higher education may be linked to the first cycle of a qualifications framework for the European Higher Education Area.

Ministers stress their commitment to making higher education equally accessible to all, on the basis of capacity, by every appropriate means.

Promotion of mobility

Mobility of students and academic and administrative staff is the basis for establishing a European Higher Education Area. Ministers emphasise its importance for academic and cultural as well as political, social and economic spheres. They note with satisfaction that since their last meeting, mobility figures have increased, thanks also to the substantial support of the European Union programmes, and agree to undertake the necessary steps to improve the quality and coverage of statistical data on student mobility.

They reaffirm their intention to make every effort to remove all obstacles to mobility within the European Higher Education Area. With a view to promoting student mobility, Ministers will take the necessary steps to enable the portability of national loans and grants.

Establishment of a system of credits

Ministers stress the important role played by the European Credit Transfer System (ECTS) in facilitating student mobility and international curriculum development. They note that ECTS is

increasingly becoming a generalised basis for the national credit systems. They encourage further progress with the goal that the ECTS becomes not only a transfer but also an accumulation system, to be applied consistently as it develops within the emerging European Higher Education Area.

Recognition of degrees: Adoption of a system of easily readable and comparable degrees

Ministers underline the importance of the Lisbon Recognition Convention, which should be ratified by all countries participating in the Bologna Process, and call on the ENIC and NARIC networks along with the competent National Authorities to further the implementation of the Convention. They set the objective that every student graduating as from 2005 should receive the Diploma Supplement automatically and free of charge. It should be issued in a widely spoken European language.

They appeal to institutions and employers to make full use of the Diploma Supplement, so as to take advantage of the improved transparency and flexibility of the higher education degree systems, for fostering employability and facilitating academic recognition for further studies.

Higher education institutions and students

Ministers welcome the commitment of Higher Education Institutions and students to the Bologna Process and recognise that it is ultimately the active participation of all partners in the Process that will ensure its long-term success. Aware of the contribution strong institutions can make to economic and societal development Ministers accept that institutions need to be empowered to take decisions on their internal organisation and administration. Ministers further call upon institutions to ensure that the reforms become fully integrated into core institutional functions and processes.

Ministers note the constructive participation of student organisations in the Bologna Process and underline the necessity to include the students continuously and at an early stage in further activities.

Students are full partners in higher education governance. Ministers note that national legal measures for ensuring student participation are largely in place throughout the European Higher

Education Area. They also call on institutions and student organisations to identify ways of increasing actual student involvement in higher education governance.

Ministers stress the need for appropriate studying and living conditions for the students, so that they can successfully complete their studies within an appropriate period of time without obstacles related to their social and economic background. They also stress the need for more comparable data on the social and economic situation of students.

***Promotion of the European dimension
in higher education***

Ministers note that, following their call in Prague, additional modules, courses and curricula with European content, orientation or organisation are being developed. They note that initiatives have been taken by Higher Education Institutions in various European countries to pool their academic resources and cultural traditions in order to promote the development of integrated study programmes and joint degrees at first, second and third level.

Moreover, they stress the necessity of ensuring a substantial period of study abroad in joint degree programmes as well as proper provision for linguistic diversity and language learning, so that students may achieve their full potential for European identity, citizenship and employability.

Ministers agree to engage at the national level to remove legal obstacles to the establishment and recognition of such degrees and to actively support the development and adequate quality assurance of integrated curricula leading to joint degrees.

Promoting the attractiveness of the European Higher Education Area

Ministers agree that the attractiveness and openness of the European higher education should be reinforced. They confirm their readiness to further develop scholarship programmes for students from third countries. Ministers declare that transnational exchanges in higher education should be governed on the basis of academic quality and academic values, and agree to work in all appropriate fora to that end. In all appropriate circumstances such fora should include social and economic partners.

They encourage the co-operation with regions in other parts of the world by opening Bologna seminars and conferences to representatives of these regions.

Lifelong learning

Ministers underline the important contribution of higher education in making lifelong learning a reality. They are taking steps to align their national policies to realise this goal and urge Higher Education Institutions and all concerned to enhance the possibilities for lifelong learning at higher education level including the recognition of prior learning. They emphasise that such action must be an integral part of higher education activity.

Ministers furthermore call those working on qualifications frameworks for the European Higher Education Area to encompass the wide range of flexible learning paths, opportunities and techniques and to make appropriate use of the ECTS credits.

They stress the need to improve opportunities for all citizens, in accordance with their aspirations and abilities, to follow the lifelong learning paths into and within higher education.

Additional Actions

European Higher Education Area and European Research Area - two pillars of the knowledge based society

Conscious of the need to promote closer links between the EHEA and the ERA in a Europe of Knowledge, and of the importance of research as an integral part of higher education across Europe, Ministers consider it necessary to go beyond the present focus on two main cycles of higher education to include the doctoral level as the third cycle in the Bologna Process. They emphasise the importance of research and research training and the promotion of interdisciplinarity in maintaining and improving the quality of higher education and in enhancing the competitiveness of European higher education more generally. Ministers call for increased mobility at the doctoral and postdoctoral levels and encourage the institutions concerned to increase their co-operation in doctoral studies and the training of young researchers.

Ministers will make the necessary effort to make European Higher Education Institutions an even more attractive and efficient partner. Therefore Ministers ask Higher Education Institu-

tions to increase the role and relevance of research to technological, social and cultural evolution and to the needs of society. Ministers understand that there are obstacles inhibiting the achievement of these goals and these cannot be resolved by Higher Education Institutions alone. It requires strong support, including financial, and appropriate decisions from national Governments and European Bodies.

Finally, Ministers state that networks at doctoral level should be given support to stimulate the development of excellence and to become one of the hallmarks of the European Higher Education Area.

Stocktaking

With a view to the goals set for 2010, it is expected that measures will be introduced to take stock of progress achieved in the Bologna Process. A mid-term stocktaking exercise would provide reliable information on how the Process is actually advancing and would offer the possibility to take corrective measures, if appropriate.

Ministers charge the Follow-up Group with organising a stocktaking process in time for their summit in 2005 and undertaking to prepare detailed reports on the progress and implementation of the intermediate priorities set for the next two years:

- quality assurance
- two-cycle system
- recognition of degrees and periods of studies

Participating countries will, furthermore, be prepared to allow access to the necessary information for research on higher education relating to the objectives of the Bologna Process. Access to data banks on ongoing research and research results shall be facilitated.

Further Follow-up ***New members***

Ministers consider it necessary to adapt the clause in the Prague Communiqué on applications for membership as follows:

Countries party to the European Cultural Convention shall be eligible for membership of the European Higher Education Area provided that they at the same time declare their willingness to pursue and implement the objectives of the Bologna Process in their own systems of higher education. Their applications should contain information on how they will implement the principles

and objectives of the declaration. Ministers decide to accept the requests for membership of Albania, Andorra, Bosnia and Herzegovina, Holy See, Russia, Serbia and Montenegro, “the former Yugoslav Republic of Macedonia” and to welcome these states as new members thus expanding the process to 40 European Countries.

Ministers recognise that membership of the Bologna Process implies substantial change and reform for all signatory countries. They agree to support the new signatory countries in those changes and reforms, incorporating them within the mutual discussions and assistance, which the Bologna Process involves.

Follow-up structure

Ministers entrust the implementation of all the issues covered in the Communiqué, the overall steering of the Bologna Process and the preparation of the next ministerial meeting to a Follow-up Group, which shall be composed of the representatives of all members of the Bologna Process and the European Commission, with the Council of Europe, the EUA, EURASHE, ESIB and UNESCO-CEPES as consultative members. This group, which should be convened at least twice a year, shall be chaired by the EU Presidency, with the host country of the next Ministerial Conference as vice-chair. A Board also chaired by the EU Presidency shall oversee the work between the meetings of the Follow-up Group. The Board will be composed of the chair, the next host country as vice-chair, the preceding and the following EU Presidencies, three participating countries elected by the Follow-up Group for one year, the European Commission and, as consultative members, the Council of Europe, the EUA, EURASHE and ESIB. The Follow-up Group as well as the Board may convene ad hoc working groups as they deem necessary.

The overall follow-up work will be supported by a Secretariat which the country hosting the next Ministerial Conference will provide.

In its first meeting after the Berlin Conference, the Follow-up Group is asked to further define the responsibilities of the Board and the tasks of the Secretariat.

Work programme 2003-2005

Ministers ask the Follow-up Group to co-ordinate activities for progress of the Bologna Process as indicated in the themes

and actions covered by this Communiqué and report on them in time for the next ministerial meeting in 2005.

Next Conference

Ministers decide to hold the next conference in the city of Bergen (Norway) in May 2005.

Communiqué of the Conference of European Ministers

*Responsible for Higher Education,
Bergen, 19-20 May 2005 [5]*

We, Ministers responsible for higher education in the participating countries of the Bologna Process, have met for a mid-term review and for setting goals and priorities towards 2010. At this conference, we have welcomed Armenia, Azerbaijan, Georgia, Moldova and Ukraine as new participating countries in the Bologna Process. We all share the common understanding of the principles, objectives and commitments of the Process as expressed in the Bologna Declaration and in the subsequent communiqués from the Ministerial Conferences in Prague and Berlin. We confirm our commitment to coordinating our policies through the Bologna Process to establish the European Higher Education Area (EHEA) by 2010, and we commit ourselves to assisting the new participating countries to implement the goals of the Process.

I. Partnership

We underline the central role of higher education institutions, their staff and students as partners in the Bologna Process. Their role in the implementation of the Process becomes all the more important now that the necessary legislative reforms are largely in place, and we encourage them to continue and intensify their efforts to establish the EHEA. We welcome the clear commitment of higher education institutions across Europe to the Process, and we recognise that time is needed to optimise the impact of structural change on curricula and thus to ensure the introduction of the innovative teaching and learning processes that Europe needs.

We welcome the support of organisations representing business and the social partners and look forward to intensified cooperation in reaching the goals of the Bologna Process. We further welcome the contributions of the international institutions and organisations that are partners to the Process.

II. Taking stock

We take note of the significant progress made towards our goals, as set out in the General Report 2003-2005 from the Follow-up Group, in EUA's *Trends IV* report, and in ESIB's report *Bologna with Student Eyes*.

At our meeting in Berlin, we asked the Follow -up Group for a mid-term stocktaking, focusing on three priorities – the degree system, quality assurance and the recognition of degrees and periods of study. From the stocktaking report we note that substantial progress has been made in these three priority areas. It will be important to ensure that progress is consistent across all participating countries. We therefore see a need for greater sharing of expertise to build capacity at both institutional and governmental level.

The degree system

We note with satisfaction that the two-cycle degree system is being implemented on a large scale, with more than half of the students being enrolled in it in most countries. However, there are still some obstacles to access between cycles. Furthermore, there is a need for greater dialogue, involving Governments, institutions and social partners, to increase the employability of graduates with bachelor qualifications, including in appropriate posts within the public service.

We adopt the overarching framework for qualifications in the EHEA, comprising three cycles (including, within national contexts, the possibility of intermediate qualifications), generic descriptors for each cycle based on learning outcomes and competences, and credit ranges in the first and second cycles. We commit ourselves to elaborating national frameworks for qualifications compatible with the overarching framework for qualifications in the EHEA by 2010, and to having started work on this by 2007. We ask the Follow-up Group to report on the implementation and further development of the overarching framework.

We underline the importance of ensuring complementarity between the overarching framework for the EHEA and the proposed broader framework for qualifications for lifelong learning encompassing general education as well as vocational education and training as now being developed within the European Union as well as among participating countries. We ask the European Commission fully to consult all parties to the Bologna Process as work progresses.

Quality assurance

Almost all countries have made provision for a quality assurance system based on the criteria set out in the Berlin Communiqué and with a high degree of cooperation and networking. However, there is still progress to be made, in particular as regards student involvement and international cooperation. Furthermore, we urge higher education institutions to continue their efforts to enhance the quality of their activities through the systematic introduction of internal mechanisms and their direct correlation to external quality assurance.

We adopt the standards and guidelines for quality assurance in the European Higher Education Area as proposed by ENQA. We commit ourselves to introducing the proposed model for peer review of quality assurance agencies on a national basis, while respecting the commonly accepted guidelines and criteria. We welcome the principle of a European register of quality assurance agencies based on national review. We ask that the practicalities of implementation be further developed by ENQA in cooperation with EUA, EURASHE and ESIB with a report back to us through the Follow-up Group. We underline the importance of cooperation between nationally recognised agencies with a view to enhancing the mutual recognition of accreditation or quality assurance decisions.

Recognition of degrees and study periods

We note that 36 of the 45 participating countries have now ratified the Lisbon Recognition Convention. We urge those that have not already done so to ratify the Convention without delay. We commit ourselves to ensuring the full implementation of its principles, and to incorporating them in national legislation as appropriate. We call on all participating countries to address rec-

ognition problems identified by the ENIC/NARIC networks. We will draw up national action plans to improve the quality of the process associated with the recognition of foreign qualifications. These plans will form part of each country's national report for the next Ministerial Conference. We express support for the subsidiary texts to the Lisbon Recognition Convention and call upon all national authorities and other stakeholders to recognise joint degrees awarded in two or more countries in the EHEA.

We see the development of national and European frameworks for qualifications as an opportunity to further embed lifelong learning in higher education. We will work with higher education institutions and others to improve recognition of prior learning including, where possible, non-formal and informal learning for access to, and as elements in, higher education programmes.

III. Further challenges and priorities

Higher education and research

We underline the importance of higher education in further enhancing research and the importance of research in underpinning higher education for the economic and cultural development of our societies and for social cohesion. We note that the efforts to introduce structural change and improve the quality of teaching should not detract from the effort to strengthen research and innovation. We therefore emphasise the importance of research and research training in maintaining and improving the quality of and enhancing the competitiveness and attractiveness of the EHEA. With a view to achieving better results we recognise the need to improve the synergy between the higher education sector and other research sectors throughout our respective countries and between the EHEA and the European Research Area.

To achieve these objectives, doctoral level qualifications need to be fully aligned with the EHEA overarching framework for qualifications using the outcomes-based approach. The core component of doctoral training is the advancement of knowledge through original research. Considering the need for structured doctoral programmes and the need for transparent supervision and assessment, we note that the normal workload of the third

cycle in most countries would correspond to 3-4 years full time. We urge universities to ensure that their doctoral programmes promote interdisciplinary training and the development of transferable skills, thus meeting the needs of the wider employment market. We need to achieve an overall increase in the numbers of doctoral candidates taking up research careers within the EHEA. We consider participants in third cycle programmes both as students and as early stage researchers. We charge the Bologna Follow-up Group with inviting the European University Association, together with other interested partners, to prepare a report under the responsibility of the Follow-up Group on the further development of the basic principles for doctoral programmes, to be presented to Ministers in 2007. Overregulation of doctoral programmes must be avoided.

The social dimension

The social dimension of the Bologna Process is a constituent part of the EHEA and a necessary condition for the attractiveness and competitiveness of the EHEA. We therefore renew our commitment to making quality higher education equally accessible to all, and stress the need for appropriate conditions for students so that they can complete their studies without obstacles related to their social and economic background. The social dimension includes measures taken by governments to help students, especially from socially disadvantaged groups, in financial and economic aspects and to provide them with guidance and counselling services with a view to widening access.

Mobility

We recognise that mobility of students and staff among all participating countries remains one of the key objectives of the Bologna Process. Aware of the many remaining challenges to be overcome, we reconfirm our commitment to facilitate the portability of grants and loans where appropriate through joint action, with a view to making mobility within the EHEA a reality. We shall intensify our efforts to lift obstacles to mobility by facilitating the delivery of visa and work permits and by encouraging participation in mobility programmes. We urge institutions and students to make full use of mobility programmes, advocating full recognition of study periods abroad within such programmes.

The attractiveness of the EHEA and cooperation with other parts of the world

The European Higher Education Area must be open and should be attractive to other parts of the world. Our contribution to achieving education for all should be based on the principle of sustainable development and be in accordance with the ongoing international work on developing guidelines for quality provision of cross-border higher education. We reiterate that in international academic cooperation, academic values should prevail.

We see the European Higher Education Area as a partner of higher education systems in other regions of the world, stimulating balanced student and staff exchange and cooperation between higher education institutions. We underline the importance of intercultural understanding and respect. We look forward to enhancing the understanding of the Bologna Process in other continents by sharing our experiences of reform processes with neighbouring regions. We stress the need for dialogue on issues of mutual interest. We see the need to identify partner regions and intensify the exchange of ideas and experiences with those regions. We ask the Follow-up Group to elaborate and agree on a strategy for the external dimension.

IV. Taking stock on progress for 2007

We charge the Follow-up Group with continuing and widening the stocktaking process and reporting in time for the next Ministerial Conference. We expect stocktaking to be based on the appropriate methodology and to continue in the fields of the degree system, quality assurance and recognition of degrees and study periods, and by 2007 we will have largely completed the implementation of these three intermediate priorities.

In particular, we shall look for progress in:

1. implementation of the standards and guidelines for quality assurance as proposed in the ENQA report;
2. implementation of the national frameworks for qualifications;
3. the awarding and recognition of joint degrees, including at the doctorate level;

4. creating opportunities for flexible learning paths in higher education, including procedures for the recognition of prior learning.

We also charge the Follow-up Group with presenting comparable data on the mobility of staff and students as well as on the social and economic situation of students in participating countries as a basis for future stocktaking and reporting in time for the next Ministerial Conference. The future stocktaking will have to take into account the social dimension as defined above.

V. Preparing for 2010

Building on the achievements so far in the Bologna Process, we wish to establish a European Higher Education Area based on the principles of quality and transparency. We must cherish our rich heritage and cultural diversity in contributing to a knowledge-based society. We commit ourselves to upholding the principle of public responsibility for higher education in the context of complex modern societies. As higher education is situated at the crossroads of research, education and innovation, it is also the key to Europe's competitiveness. As we move closer to 2010, we undertake to ensure that higher education institutions enjoy the necessary autonomy to implement the agreed reforms, and we recognise the need for sustainable funding of institutions.

The European Higher Education Area is structured around three cycles, where each level has the function of preparing the student for the labour market, for further competence building and for active citizenship. The overarching framework for qualifications, the agreed set of European standards and guidelines for quality assurance and the recognition of degrees and periods of study are also key characteristics of the structure of the EHEA.

We endorse the follow-up structure set up in Berlin, with the inclusion of the Education International (EI) Pan-European Structure, the European Association for Quality Assurance in Higher Education (ENQA), and the Union of Industrial and Employers' Confederations of Europe (UNICE) as new consultative members of the Follow-up Group.

As the Bologna Process leads to the establishment of the EHEA, we have to consider the appropriate arrangements needed

to support the continuing development beyond 2010, and we ask the Follow-up Group to explore these issues.

We will hold the next Ministerial Conference in London in 2007.

London Communiqué

Towards the European Higher Education Area: responding to challenges in a globalised world [8] (18 May 2007)

1. Introduction

1.1. We, the Ministers responsible for Higher Education in the countries participating in the Bologna Process, have met in London to review progress made since we convened in Bergen in 2005.

1.2. Based on our agreed criteria for country membership, we welcome the Republic of Montenegro as a member of the Bologna Process.

1.3. Developments over the last two years have brought us a significant step closer to the realisation of the European Higher Education Area (EHEA). Building on our rich and diverse European cultural heritage, we are developing an EHEA based on institutional autonomy, academic freedom, equal opportunities and democratic principles that will facilitate mobility, increase employability and strengthen Europe's attractiveness and competitiveness. As we look ahead, we recognise that, in a changing world, there will be a continuing need to adapt our higher education systems, to ensure that the EHEA remains competitive and can respond effectively to the challenges of globalisation. In the short term, we appreciate that implementing the Bologna reforms is a significant task, and appreciate the continuing support and commitment of all partners in the process. We welcome the contribution of the working groups and seminars in helping to drive forward progress. We agree to continue to work together in partnership, assisting one another in our efforts and promoting the exchange of good practice.

1.4. We reaffirm our commitment to increasing the compatibility and comparability of our higher education systems, whilst

at the same time respecting their diversity. We recognise the important influence higher education institutions (HEIs) exert on developing our societies, based on their traditions as centres of learning, research, creativity and knowledge transfer as well as their key role in defining and transmitting the values on which our societies are built. Our aim is to ensure that our HEIs have the necessary resources to continue to fulfil their full range of purposes. Those purposes include: preparing students for life as active citizens in a democratic society; preparing students for their future careers and enabling their personal development; creating and maintaining a broad, advanced knowledge base; and stimulating research and innovation.

1.5. We therefore underline the importance of strong institutions, which are diverse, adequately funded, autonomous and accountable. The principles of non-discrimination and equitable access should be respected and promoted throughout the EHEA. We commit to upholding these principles and to ensuring that neither students nor staff suffer discrimination of any kind.

2. Progress towards the EHEA

2.1. Our stocktaking report, along with EUA's *Trends V* report, ESIB's *Bologna With Student Eyes* and Eurydice's *Focus on the Structure of Higher Education in Europe*, confirms that there has been good overall progress in the last two years.

There is an increasing awareness that a significant outcome of the process will be a move towards student-centred higher education and away from teacher driven provision. We will continue to support this important development.

Mobility

2.2. Mobility of staff, students and graduates is one of the core elements of the Bologna Process, creating opportunities for personal growth, developing international cooperation between individuals and institutions, enhancing the quality of higher education and research, and giving substance to the European dimension.

2.3. Some progress has been made since 1999, but many challenges remain. Among the obstacles to mobility, issues relating to immigration, recognition, insufficient financial incentives and

inflexible pension arrangements feature prominently. We recognise the responsibility of individual Governments to facilitate the delivery of visas, residence and work permits, as appropriate. Where these measures are outside our competence as Ministers for Higher Education, we undertake to work within our respective Governments for decisive progress in this area. At national level, we will work to implement fully the agreed recognition tools and procedures and consider ways of further incentivising mobility for both staff and students. This includes encouraging a significant increase in the number of joint programmes and the creation of flexible curricula, as well as urging our institutions to take greater responsibility for staff and student mobility, more equitably balanced between countries across the EHEA.

Degree structure

2.4. Good progress is being made at national and institutional levels towards our goal of an EHEA based on a three-cycle degree system. The number of students enrolled on courses in the first two-cycles has increased significantly and there has been a reduction in structural barriers between cycles. Similarly, there has been an increase in the number of structured doctoral programmes. We underline the importance of curricula reform leading to qualifications better suited both to the needs of the labour market and to further study. Efforts should concentrate in future on removing barriers to access and progression between cycles and on proper implementation of ECTS based on learning outcomes and student workload. We underline the importance of improving graduate employability, whilst noting that data gathering on this issue needs to be developed further.

Recognition

2.5. Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components of the EHEA, both internally and in a global context. Easily readable and comparable degrees and accessible information on educational systems and qualifications frameworks are prerequisites for citizens' mobility and ensuring the continuing attractiveness and competitiveness of the EHEA. While we are pleased that 38 members of the Bologna Process, including Montenegro, have

now ratified the Council of Europe/UNESCO Convention on the recognition of qualifications concerning Higher Education in the European region (Lisbon Recognition Convention), we urge the remaining members to do so as a matter of priority.

2.6. There has been progress in the implementation of the Lisbon Recognition Convention (LRC), ECTS and diploma supplements, but the range of national and institutional approaches to recognition needs to be more coherent. To improve recognition practices, we therefore ask the Bologna Follow-up Group (BFUG) to arrange for the ENIC/NARIC networks to analyse our national action plans and spread good practice.

Qualifications Frameworks

2.7. Qualifications frameworks are important instruments in achieving comparability and transparency within the EHEA and facilitating the movement of learners within, as well as between, higher education systems. They should also help HEIs to develop modules and study programmes based on learning outcomes and credits, and improve the recognition of qualifications as well as all forms of prior learning.

2.8. We note that some initial progress has been made towards the implementation of national qualifications frameworks, but that much more effort is required. We commit ourselves to fully implementing such national qualifications frameworks, certified against the overarching Framework for Qualifications of the EHEA, by 2010. Recognising that this is a challenging task, we ask the Council of Europe to support the sharing of experience in the elaboration of national qualifications frameworks. We emphasise that qualification frameworks should be designed so as to encourage greater mobility of students and teachers and improve employability.

2.9. We are satisfied that national qualifications frameworks compatible with the overarching Framework for Qualifications of the EHEA will also be compatible with the proposal from the European Commission on a European Qualifications Framework for Lifelong Learning.

2.10. We see the overarching Framework for Qualifications of the EHEA, which we agreed in Bergen, as a central element of the promotion of European higher education in a global context.

Lifelong Learning

2.11. The stocktaking report shows that some elements of flexible learning exist in most countries, but a more systematic development of flexible learning paths to support lifelong learning is at an early stage. We therefore ask BFUG to increase the sharing of good practice and to work towards a common understanding of the role of higher education in lifelong learning. Only in a small number of EHEA countries could the recognition of prior learning for access and credits be said to be well developed. Working in cooperation with ENIC/NARIC, we invite BFUG to develop proposals for improving the recognition of prior learning.

Quality Assurance and a European Register of Quality Assurance Agencies

2.12. The Standards and Guidelines for Quality Assurance in the EHEA adopted in Bergen (ESG) have been a powerful driver of change in relation to quality assurance. All countries have started to implement them and some have made substantial progress. External quality assurance in particular is much better developed than before. The extent of student involvement at all levels has increased since 2005, although improvement is still necessary. Since the main responsibility for quality lies with HEIs, they should continue to develop their systems of quality assurance. We acknowledge the progress made with regard to mutual recognition of accreditation and quality assurance decisions, and encourage continued international cooperation amongst quality assurance agencies.

2.13. The first European Quality Assurance Forum, jointly organised by EUA, ENQA, EURASHE and ESIB (the E4 Group) in 2006 provided an opportunity to discuss European developments in quality assurance. We encourage the four organisations to continue to organise European Quality Assurance Fora on an annual basis, to facilitate the sharing of good practice and ensure that quality in the EHEA continues to improve.

2.14. We thank the E4 Group for responding to our request to further develop the practicalities of setting up a Register of European Higher Education Quality Assurance Agencies. The purpose of the register is to allow all stakeholders and the general public open access to objective information about trustworthy quality

assurance agencies that are working in line with the ESG. It will therefore enhance confidence in higher education in the EHEA and beyond, and facilitate the mutual recognition of quality assurance and accreditation decisions. We welcome the establishment of a register by the E4 group, working in partnership, based on their proposed operational model. The register will be voluntary, self-financing, independent and transparent. Applications for inclusion on the register should be evaluated on the basis of substantial compliance with the ESG, evidenced through an independent review process endorsed by national authorities, where this endorsement is required by those authorities. We ask the E4 group to report progress to us regularly through BFUG, and to ensure that after two years of operation, the register is evaluated externally, taking account of the views of all stakeholders.

Doctoral candidates

2.15. Closer alignment of the EHEA with the European Research Area (ERA) remains an important objective. We recognise the value of developing and maintaining a wide variety of doctoral programmes linked to the overarching qualifications framework for the EHEA, whilst avoiding overregulation. At the same time, we appreciate that enhancing provision in the third cycle and improving the status, career prospects and funding for early stage researchers are essential preconditions for meeting Europe's objectives of strengthening research capacity and improving the quality and competitiveness of European higher education.

2.16. We therefore invite our HEIs to reinforce their efforts to embed doctoral programmes in institutional strategies and policies, and to develop appropriate career paths and opportunities for doctoral candidates and early stage researchers.

2.17. We invite EUA to continue to support the sharing of experience among HEIs on the range of innovative doctoral programmes that are emerging across Europe as well as on other crucial issues such as transparent access arrangements, supervision and assessment procedures, the development of transferable skills and ways of enhancing employability. We will look for appropriate opportunities to encourage greater exchange of information on funding and other issues between our Governments as well as with other research funding bodies.

Social dimension

2.18. Higher education should play a strong role in fostering social cohesion, reducing inequalities and raising the level of knowledge, skills and competences in society. Policy should therefore aim to maximise the potential of individuals in terms of their personal development and their contribution to a sustainable and democratic knowledge-based society. We share the societal aspiration that the student body entering, participating in and completing higher education at all levels should reflect the diversity of our populations. We reaffirm the importance of students being able to complete their studies without obstacles related to their social and economic background. We therefore continue our efforts to provide adequate student services, create more flexible learning pathways into and within higher education, and to widen participation at all levels on the basis of equal opportunity.

The European Higher Education Area in a global context

2.19. We are pleased that in many parts of the world, the Bologna reforms have created considerable interest and stimulated discussion between European and international partners on a range of issues. These include the recognition of qualifications, the benefits of cooperation based upon partnership, mutual trust and understanding, and the underlying values of the Bologna Process. Moreover, we acknowledge that efforts have been made in some countries in other parts of the world to bring their higher education systems more closely into line with the Bologna framework.

2.20. We adopt the strategy “The European Higher Education Area in a Global Setting” and will take forward work in the core policy areas: improving information on, and promoting the attractiveness and competitiveness of the EHEA; strengthening cooperation based on partnership; intensifying policy dialogue; and improving recognition. This work ought to be seen in relation to the OECD/UNESCO *Guidelines for Quality Provision in Cross-border Higher Education*.

3. Priorities for 2009

3.1. Over the next two years, we agree to concentrate on completing agreed Action Lines, including the ongoing priorities

of the three-cycle degree system, quality assurance and recognition of degrees and study periods. We will focus in particular on the following areas for action.

Mobility

3.2. In our national reports for 2009, we will report on action taken at national level to promote the mobility of students and staff, including measures for future evaluation. We will focus on the main national challenges identified in paragraph 2.3 above. We also agree to set up a network of national experts to share information, and help to identify and overcome obstacles to the portability of grants and loans.

Social Dimension

3.3. Similarly, we will report on our national strategies and policies for the social dimension, including action plans and measures to evaluate their effectiveness. We will invite all stakeholders to participate in, and support this work, at the national level.

Data collection

3.4. We recognise the need to improve the availability of data on both mobility and the social dimension across all the countries participating in the Bologna Process. We therefore ask the European Commission (Eurostat), in conjunction with Eurostudent, to develop comparable and reliable indicators and data to measure progress towards the overall objective for the social dimension and student and staff mobility in all Bologna countries. Data in this field should cover participative equity in higher education as well as employability for graduates. This task should be carried out in conjunction with BFUG and a report should be submitted to our 2009 Ministerial conference.

Employability

3.5. Following up on the introduction of the three-cycle degree system, we ask BFUG to consider in more detail how to improve employability in relation to each of these cycles as well as in the context of lifelong learning. This will involve the responsibilities of all stakeholders. Governments and HEIs will need to communicate more with employers and other stakeholders on the rationale for their reforms. We will work, as appropriate, within our governments to ensure that employment and career structures within the public service are fully compatible with the new

degree system. We urge institutions to further develop partnerships and cooperation with employers in the ongoing process of curriculum innovation based on learning outcomes.

The European Higher Education Area in a global context

3.6. We ask BFUG to report back to us on overall developments in this area at the European, national and institutional levels by 2009. All stakeholders have a role here within their spheres of responsibility. In reporting on the implementation of the strategy for the EHEA in a global context, BFUG should in particular give consideration to two priorities. First, to improve the information available about the EHEA, by developing the Bologna Secretariat website and building on EUA's Bologna Handbook; and second, to improve recognition. We call on HEIs, ENIC/NARIC centres and other competent recognition authorities within the EHEA to assess qualifications from other parts of the world with the same open mind with which they would expect European qualifications to be assessed elsewhere, and to base this recognition on the principles of the LRC.

Stocktaking

3.7. We ask BFUG to continue the stocktaking process, based on national reports, in time for our 2009 Ministerial conference. We expect further development of the qualitative analysis in stocktaking, particularly in relation to mobility, the Bologna Process in a global context and the social dimension. The fields covered by stocktaking should continue to include the degree system and employability of graduates, recognition of degrees and study periods and implementation of all aspects of quality assurance in line with the ESG. With a view to the development of more student-centred, outcome-based learning, the next exercise should also address in an integrated way national qualifications frameworks, learning outcomes and credits, lifelong learning, and the recognition of prior learning.

4. Looking forward to 2010 and beyond

4.1. As the EHEA continues to develop and respond to the challenges of globalisation, we anticipate that the need for collaboration will continue beyond 2010.

4.2. We are determined to seize 2010, which will mark the passage from the Bologna Process to the EHEA, as an opportunity

to reaffirm our commitment to higher education as a key element in making our societies sustainable, at national as well as at European level. We will take 2010 as an opportunity to reformulate the vision that motivated us in setting the Bologna Process in motion in 1999 and to make the case for an EHEA underpinned by values and visions that go beyond issues of structures and tools. We undertake to make 2010 an opportunity to reset our higher education systems on a course that looks beyond the immediate issues and makes them fit to take up the challenges that will determine our future.

4.3. We ask BFUG as a whole to consider further how the EHEA might develop after 2010 and to report back to the next ministerial meeting in 2009. This should include proposals for appropriate support structures, bearing in mind that the current informal collaborative arrangements are working well and have brought about unprecedented change.

4.4. Building on previous stocktaking exercises, *Trends*, and *Bologna With Student Eyes*, we invite BFUG to consider for 2010 the preparation of a report including an independent assessment, in partnership with the consultative members, evaluating the overall progress of the Bologna Process across the EHEA since 1999.

4.5. We delegate the decision on the nature, content and place of any Ministerial meeting in 2010 to BFUG, to be taken within the first half of 2008.

4.6. Our next meeting will be hosted by the Benelux countries in Leuven/Louvain-la-Neuve on 28-29 April 2009.

Communiqué of the Conference of European Ministers

*Responsible for Higher Education, Leuven and
Louvain-la-Neuve, 28-29 April 2009 [6]*

We, the Ministers responsible for higher education in the 46 countries of the Bologna Process convened in Leuven/Louvain-la-Neuve, Belgium, on April 28 and 29, 2009 to take stock of the achievements of the Bologna Process and to establish the priori-

ties for the European Higher Education Area (EHEA) for the next decade.

Preamble

1. In the decade up to 2020 European higher education has a vital contribution to make in realising a Europe of knowledge that is highly creative and innovative. Faced with the challenge of an ageing population Europe can only succeed in this endeavour if it maximises the talents and capacities of all its citizens and fully engages in lifelong learning as well as in widening participation in higher education.

2. European higher education also faces the major challenge and the ensuing opportunities of globalisation and accelerated technological developments with new providers, new learners and new types of learning. Student-centred learning and mobility will help students develop the competences they need in a changing labour market and will empower them to become active and responsible citizens.

3. Our societies currently face the consequences of a global financial and economic crisis. In order to bring about sustainable economic recovery and development, a dynamic and flexible European higher education will strive for innovation on the basis of the integration between education and research at all levels. We recognise that higher education has a key role to play if we are to successfully meet the challenges we face and if we are to promote the cultural and social development of our societies. Therefore, we consider public investment in higher education of utmost priority.

4. We pledge our full commitment to the goals of the European Higher Education Area, which is an area where higher education is a public responsibility, and where all higher education institutions are responsive to the wider needs of society through the diversity of their missions. The aim is to ensure that higher education institutions have the necessary resources to continue to fulfil their full range of purposes such as preparing students for life as active citizens in a democratic society; preparing students for their future careers and enabling their personal development; creating and maintaining a broad, advanced knowledge base and stimulating research and innovation. The necessary ongoing reform of higher education systems and policies will continue to

be firmly embedded in the European values of institutional autonomy, academic freedom and social equity and will require full participation of students and staff.

I. Achievements and consolidation

5. Over the past decade we have developed the European Higher Education Area ensuring that it remains firmly rooted in Europe's intellectual, scientific and cultural heritage and ambitions; characterised by permanent cooperation between governments, higher education institutions, students, staff, employers and other stakeholders. The contribution from European institutions and organisations to the reform process has also been a significant one.

6. The Bologna Process is leading to greater compatibility and comparability of the systems of higher education and is making it easier for learners to be mobile and for institutions to attract students and scholars from other continents. Higher education is being modernized with the adoption of a three-cycle structure including, within national contexts, the possibility of intermediate qualifications linked to the first cycle and with the adoption of the European Standards and Guidelines for quality assurance. We have also seen the creation of a European register for quality assurance agencies and the establishment of national qualifications frameworks linked to the overarching European Higher Education Area framework, based on learning outcomes and workload. Moreover, the Bologna Process has promoted the Diploma Supplement and the European Credit Transfer and Accumulation System to further increase transparency and recognition.

7. The objectives set out by the Bologna Declaration and the policies developed in the subsequent years are still valid today. Since not all the objectives have been completely achieved, the full and proper implementation of these objectives at European, national and institutional level will require increased momentum and commitment beyond 2010.

II. Learning for the future: higher education priorities for the decade to come

8. Striving for excellence in all aspects of higher education, we address the challenges of the new era. This requires a constant

focus on quality. Moreover, upholding the highly valued diversity of our education systems, public policies will fully recognise the value of various missions of higher education, ranging from teaching and research to community service and engagement in social cohesion and cultural development. All students and staff of higher education institutions should be equipped to respond to the changing demands of the fast evolving society.

Social dimension: equitable access and completion

9. The student body within higher education should reflect the diversity of Europe's populations. We therefore emphasize the social characteristics of higher education and aim to provide equal opportunities to quality education. Access into higher education should be widened by fostering the potential of students from underrepresented groups and by providing adequate conditions for the completion of their studies. This involves improving the learning environment, removing all barriers to study, and creating the appropriate economic conditions for students to be able to benefit from the study opportunities at all levels. Each participating country will set measurable targets for widening overall participation and increasing participation of underrepresented groups in higher education, to be reached by the end of the next decade. Efforts to achieve equity in higher education should be complemented by actions in other parts of the educational system.

Lifelong learning

10. Widening participation shall also be achieved through lifelong learning as an integral part of our education systems. Lifelong learning is subject to the principle of public responsibility. The accessibility, quality of provision and transparency of information shall be assured. Lifelong learning involves obtaining qualifications, extending knowledge and understanding, gaining new skills and competences or enriching personal growth. Lifelong learning implies that qualifications may be obtained through flexible learning paths, including part-time studies, as well as work-based routes.

11. The implementation of lifelong learning policies requires strong partnerships between public authorities, higher education institutions, students, employers and employees. The European Universities' Charter on Lifelong Learning developed by the European University Association provides a useful input for defining

such partnerships. Successful policies for lifelong learning will include basic principles and procedures for recognition of prior learning on the basis of learning outcomes regardless of whether the knowledge, skills and competences were acquired through formal, non-formal, or informal learning paths. Lifelong learning will be supported by adequate organisational structures and funding. Lifelong learning encouraged by national policies should inform the practice of higher education institutions.

12. The development of national qualifications frameworks is an important step towards the implementation of lifelong learning. We aim at having them implemented and prepared for self-certification against the overarching Qualifications Framework for the European Higher Education Area by 2012. This will require continued coordination at the level of the EHEA and with the European Qualifications Framework for Lifelong Learning. Within national contexts, intermediate qualifications within the first cycle can be a means of widening access to higher education.

Employability

13. With labour markets increasingly relying on higher skill levels and transversal competences, higher education should equip students with the advanced knowledge, skills and competences they need throughout their professional lives. Employability empowers the individual to fully seize the opportunities in changing labour markets. We aim at raising initial qualifications as well as maintaining and renewing a skilled workforce through close cooperation between governments, higher education institutions, social partners and students. This will allow institutions to be more responsive to employers needs and employers to better understand the educational perspective. Higher education institutions, together with governments, government agencies and employers, shall improve the provision, accessibility and quality of their careers and employment related guidance services to students and alumni. We encourage work placements embedded in study programmes as well as on-the-job learning.

Student-centred learning and the teaching mission of higher education

14. We reassert the importance of the teaching mission of higher education institutions and the necessity for ongoing cur-

ricular reform geared toward the development of learning outcomes. Student-centred learning requires empowering individual learners, new approaches to teaching and learning, effective support and guidance structures and a curriculum focused more clearly on the learner in all three cycles. Curricular reform will thus be an ongoing process leading to high quality, flexible and more individually tailored education paths. Academics, in close cooperation with student and employer representatives, will continue to develop learning outcomes and international reference points for a growing number of subject areas. We ask the higher education institutions to pay particular attention to improving the teaching quality of their study programmes at all levels. This should be a priority in the further implementation of the European Standards and Guidelines for quality assurance.

Education, research and innovation

15. Higher education should be based at all levels on state of the art research and development thus fostering innovation and creativity in society. We recognise the potential of higher education programmes, including those based on applied science, to foster innovation. Consequently, the number of people with research competences should increase. Doctoral programmes should provide high quality disciplinary research and increasingly be complemented by inter-disciplinary and inter-sectoral programmes. Moreover, public authorities and institutions of higher education will make the career development of early stage researchers more attractive.

International openness

16. We call upon European higher education institutions to further internationalise their activities and to engage in global collaboration for sustainable development. The attractiveness and openness of European higher education will be highlighted by joint European actions. Competition on a global scale will be complemented by enhanced policy dialogue and cooperation based on partnership with other regions of the world, in particular through the organisation of Bologna Policy Fora, involving a variety of stakeholders.

17. Transnational education should be governed by the European Standards and Guidelines for quality assurance as ap-

plicable within the European Higher Education Area and be in line with the UNESCO/OECD Guidelines for Quality Provision in Cross-Border Higher Education.

Mobility

18. We believe that mobility of students, early stage researchers and staff enhances the quality of programmes and excellence in research; it strengthens the academic and cultural internationalization of European higher education. Mobility is important for personal development and employability, it fosters respect for diversity and a capacity to deal with other cultures. It encourages linguistic pluralism, thus underpinning the multilingual tradition of the European Higher Education Area and it increases cooperation and competition between higher education institutions. Therefore, mobility shall be the hallmark of the European Higher Education Area. We call upon each country to increase mobility, to ensure its high quality and to diversify its types and scope. In 2020, at least 20% of those graduating in the European Higher Education Area should have had a study or training period abroad.

19. Within each of the three cycles, opportunities for mobility shall be created in the structure of degree programmes. Joint degrees and programmes as well as mobility windows shall become more common practice. Moreover, mobility policies shall be based on a range of practical measures pertaining to the funding of mobility, recognition, available infrastructure, visa and work permit regulations. Flexible study paths and active information policies, full recognition of study achievements, study support and the full portability of grants and loans are necessary requirements. Mobility should also lead to a more balanced flow of incoming and outgoing students across the European Higher Education Area and we aim for an improved participation rate from diverse student groups.

20. Attractive working conditions and career paths as well as open international recruitment are necessary to attract highly qualified teachers and researchers to higher education institutions. Considering that teachers are key players, career structures should be adapted to facilitate mobility of teachers, early stage researchers and other staff; framework conditions will be established to ensure appropriate access to social security and

to facilitate the portability of pensions and supplementary pension rights for mobile staff, making the best use of existing legal frameworks.

Data collection

21. Improved and enhanced data collection will help monitor progress made in the attainment of the objectives set out in the social dimension, employability and mobility agendas, as well as in other policy areas, and will serve as a basis for both stocktaking and benchmarking.

Multidimensional transparency tools

22. We note that there are several current initiatives designed to develop mechanisms for providing more detailed information about higher education institutions across the EHEA to make their diversity more transparent. We believe that any such mechanisms, including those helping higher education systems and institutions to identify and compare their respective strengths, should be developed in close consultation with the key stakeholders. These transparency tools need to relate closely to the principles of the Bologna Process, in particular quality assurance and recognition, which will remain our priority, and should be based on comparable data and adequate indicators to describe the diverse profiles of higher education institutions and their programmes.

Funding

23. Higher education institutions have gained greater autonomy along with rapidly growing expectations to be responsive to societal needs and to be accountable. Within a framework of public responsibility we confirm that public funding remains the main priority to guarantee equitable access and further sustainable development of autonomous higher education institutions. Greater attention should be paid to seeking new and diversified funding sources and methods.

III. The organisational structure and follow-up

24. The present organisational structure of the Bologna Process, characterised by the cooperation between governments, the academic community with its representative organisations, and other stakeholders, is endorsed as being fit for purpose. In the fu-

ture, the Bologna Process will be co-chaired by the country holding the EU presidency and a non-EU country.

25. In order to interact with other policy areas, the BFUG will liaise with experts and policy makers from other fields, such as research, immigration, social security and employment.

26. We entrust the Bologna Follow-up Group to prepare a work plan up to 2012 to take forward the priorities identified in this Communiqué and the recommendations of the reports submitted to this Ministerial conference, allowing the future integration of the outcome of the independent assessment of the Bologna Process.

In particular the BFUG is asked:

- To define the indicators used for measuring and monitoring mobility and the social dimension in conjunction with the data collection;
- To consider how balanced mobility could be achieved within the EHEA;
- To monitor the development of the transparency mechanisms and to report back to the 2012 ministerial conference;
- To set up a network, making optimal use of existing structures, for better information on and promotion of the Bologna Process outside the EHEA;
- To follow-up on the recommendations of analysis of the national action plans on recognition.

27. Reporting on the progress of the implementation of the Bologna Process will be carried out in a coordinated way.

- Stocktaking will further refine its evidence-based methodology.
- Eurostat together with Eurostudent and in cooperation with Eurydice will be asked to contribute through relevant data collection.
- The work of reporting will be overseen by the Bologna Follow-up Group and will lead to an overall report integrating the aforementioned sources for the 2012 ministerial conference.

28. We ask the E4 group (ENQA-EUA-EURASHE-ESU) to continue its cooperation in further developing the European dimen-

sion of quality assurance and in particular to ensure that the European Quality Assurance Register is evaluated externally, taking into account the views of the stakeholders.

29. We will meet again at the Bologna anniversary conference jointly hosted by Austria and Hungary in Budapest and Vienna on 11-12 March 2010. The next regular ministerial conference will be hosted by Romania in Bucharest on 27-28 April 2012. The following ministerial conferences will be held in 2015, 2018 and 2020.

Budapest-Vienna Declaration
on the European Higher Education Area
March 12, 2010 [1]

1. We, the Ministers responsible for higher education in the countries participating in the Bologna Process, met in Budapest and Vienna on March 11 and 12, 2010 to launch the European Higher Education Area (EHEA), as envisaged in the Bologna Declaration of 1999.

2. Based on our agreed criteria for country membership, we welcome Kazakhstan as new participating country of the European Higher Education Area.

3. The Bologna Declaration in 1999 set out a vision for 2010 of an internationally competitive and attractive European Higher Education Area where higher education institutions, supported by strongly committed staff, can fulfil their diverse missions in the knowledge society; and where students benefiting from mobility with smooth and fair recognition of their qualifications, can find the best suited educational pathways.

4. Since 1999, 47 parties to the European Cultural Convention, have signed up to this vision and have made significant progress towards achieving it. In a unique partnership between public authorities, higher education institutions, students and staff, together with employers, quality assurance agencies, international organisations and European institutions, we have engaged in a series of reforms to build a European Higher Education Area

based on trust, cooperation and respect for the diversity of cultures, languages, and higher education systems.

5. The Bologna Process and the resulting European Higher Education Area, being unprecedented examples of regional, cross-border cooperation in higher education, have raised considerable interest in other parts of the world and made European higher education more visible on the global map. We welcome this interest and look forward to intensifying our policy dialogue and cooperation with partners across the world.

6. We have taken note of the independent assessment and the stakeholders' reports. We welcome their affirmation that institutions of higher education, staff and students increasingly identify with the goals of the Bologna Process. While much has been achieved in implementing the Bologna reforms, the reports also illustrate that EHEA action lines such as degree and curriculum reform, quality assurance, recognition, mobility and the social dimension are implemented to varying degrees. Recent protests in some countries, partly directed against developments and measures not related to the Bologna Process, have reminded us that some of the Bologna aims and reforms have not been properly implemented and explained. We acknowledge and will listen to the critical voices raised among staff and students. We note that adjustments and further work, involving staff and students, are necessary at European, national, and especially institutional levels to achieve the European Higher Education Area as we envisage it.

7. We, the Ministers, are committed to the full and proper implementation of the agreed objectives and the agenda for the next decade set by the Leuven/Louvain-la-Neuve Communiqué. In close cooperation with higher education institutions, staff, students and other stakeholders, we will step up our efforts to accomplish the reforms already underway to enable students and staff to be mobile, to improve teaching and learning in higher education institutions, to enhance graduate employability, and to provide quality higher education for all. At national level, we also strive to improve communication on and understanding of the Bologna Process among all stakeholders and society as a whole.

8. We, the Ministers, recommit to academic freedom as well as autonomy and accountability of higher education institutions

as principles of the European Higher Education Area and underline the role the higher education institutions play in fostering peaceful democratic societies and strengthening social cohesion.

9. We acknowledge the key role of the academic community - institutional leaders, teachers, researchers, administrative staff and students - in making the European Higher Education Area a reality, providing the learners with the opportunity to acquire knowledge, skills and competences furthering their careers and lives as democratic citizens as well as their personal development. We recognise that a more supportive environment for the staff to fulfil their tasks, is needed. We commit ourselves to working towards a more effective inclusion of higher education staff and students in the implementation and further development of the EHEA. We fully support staff and student participation in decision-making structures at European, national and institutional levels.

10. We call upon all actors involved to facilitate an inspiring working and learning environment and to foster student-centred learning as a way of empowering the learner in all forms of education, providing the best solution for sustainable and flexible learning paths. This also requires the cooperation of teachers and researchers in international networks.

11. We, the Ministers, reaffirm that higher education is a public responsibility. We commit ourselves, notwithstanding these difficult economic times, to ensuring that higher education institutions have the necessary resources within a framework established and overseen by public authorities. We are convinced that higher education is a major driver for social and economic development and for innovation in an increasingly knowledge-driven world. We shall therefore increase our efforts on the social dimension in order to provide equal opportunities to quality education, paying particular attention to underrepresented groups.

12. We, the Ministers responsible for the European Higher Education Area, ask the Bologna Follow-up Group to propose measures to facilitate the proper and full implementation of the agreed Bologna principles and action lines across the European Higher Education Area, especially at the national and institutional levels, among others by developing additional working methods,

Table 1.1

Focus on higher education in Europe 2010: the impact of the Bologna process [2]

Timeline of the Bologna process

Year	Event	Key Objectives / Focus	Key Milestones / Outcomes	Policy Instruments / Documents	Geographical Scope / Communication	Impact / Status
1998	Sorbonne Declaration	Mobility of students, teachers, researchers and administrative staff	Social dimension of mobility	Portability of loans and grants; Improvement of mobility data	Attention to visa and work permits	Challenges of visa and work permits, pension systems and recognition
	A common two-cycle degree system	Easily readable and comparable degrees	Fair recognition; Development of recognised Joint degrees	Inclusion of doctoral level as third cycle; Recognition of degrees and periods of studies; Joint degrees	FQ-EHEA adopted; National Qualifications Frameworks launched	National Qualifications Frameworks by 2012
	Use of credits	A system of credits (ECTS)	Social dimension; Lifelong learning (LLL)	Equal access; Alignment of national LLL policies; Recognition of Prior Learning (RPL)	Reinforcement of the social dimension; Flexible learning paths in higher education	National targets for the social dimension to be measured by 2020
	Europe of Knowledge	European cooperation in quality assurance	ECTS and Diploma Supplement (DS); Cooperation between quality assurance and recognition professionals	ECTS for credit accumulation; Quality assurance at institutional, national and European level	European Standards and Guidelines for quality assurance adopted	LLL as a public responsibility requiring strong partnerships; Call to work on employability
1999	Bologna Declaration	European dimensions in higher education	Attractiveness of the European Higher Education Area	Links between higher education and research areas	International cooperation on the basis of values and sustainable development	Continuing implementation of Bologna tools
2001	Prague Communiqué					Quality as an overarching focus for EHEA
2003	Berlin Communiqué					Creation of the European Quality Assurance Register (EQAR)
2005	Bergen Communiqué					Need for coherent use of tools and recognition practices
2007	London Communiqué					Strategy to improve the global dimension of the Bologna process adopted
2009	Leuven/Louvain-la-Neuve Communiqué					Enhance global policy dialogue through Bologna Policy Fora

such as peer learning, study visits and other information sharing activities. By continuously developing, enhancing and strengthening the European Higher Education Area and taking further the synergies with the European Research Area, Europe will be able to successfully face the challenges of the next decade.

13. Our next Ministerial Meeting to take stock of progress and to drive the Leuven/Louvain-la-Neuve agenda forward, will be hosted by Romania in Bucharest on 26-27 April 2012.

List of recommended literature

1. Budapest-Vienna Declaration on the European Higher Education Area March 12, 2010 [E-resource] – Access mode: <http://www.ehea.info/article-details.aspx?ArticleId=43>
2. Bologna Process & Strategic Challenges [E-resource] – Access mode: <http://tools.jiscinfonet.ac.uk/downloads/bologna/Bologna.pdf>
3. Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003 [E-resource] – Access mode: <http://www.ehea.info/article-details.aspx?ArticleId=43>
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PART 2

STRATEGIC DIRECTION OF SCIENCE DEVELOPMENT IN THE SYSTEM OF EUROPEAN EDUCATIONAL AREA

The basis for Ukraine-EU cooperation in science and research is laid down by *the Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part*, from 2014, *the Agreement between Ukraine and EU on Scientific and Technological Cooperation* from 4 July 2002, which was renewed on 15 July 2015 following the adoption of the Law of Ukraine № 602-VIII for an additional period of five years with effect from 8 November 2014. The first meeting of the Joint Committee established under the EU-Ukraine S&T Cooperation Agreement to monitor the fulfilment of its provisions as well as to define further steps to activate cooperation, took place in Brussels on 23 November 2011.

The results of Ukraine's participation in the first year of EU Programme on Research and Innovation "**Horizon 2020**" indicate that our country remains among the key partners of the EU possessing the second position after USA in terms of submitted proposals for the research projects and the fourth place in terms of participation in running projects among the third countries. Overall success rates of submitted projects is 13,31%. Among the main partners of Ukraine are UK, Germany, France, Italy, Poland.

With the signing of an agreement between Ukraine and the EU Commission on the associate participation of Ukraine in the EU Programme "Horizon 2020", which took place in Kyiv on 20 March 2015, and which came into an effect on 17 August 2015

following its ratification by the Parliament of Ukraine, the Ukrainian scientific and research institutions received an opportunity to be involved in “Horizon 2020” Programme on equal with the EU countries conditions starting from 2015.

Ukraine pays special attention to the cooperation with EU in space sphere, notably to the interaction with the European Commission, European Space Agency, Space agencies of the EU member states. Currently Ukraine’s participation in the Galileo-EGNOS and COPERNICUS programmes, creation of the preconditions for the future membership in the European Space Agency are among the key priorities of its space exploration policy.

On 27 November 2013 the Joint Declaration on the initiation of the EGNOS Project expansion to the territory of Ukraine was signed in Brussels on the level of Ukrainian Government and European Commission. The implementation of practical steps on the deployment of Range and Integrity Monitoring Stations (RIMS) of the EGNOS system in Ukraine are scheduled for 2015.

Ukraine-Euratom dialogue is also important element of scientific and technological cooperation between our country and EU. On 19 November 2013 the second meeting of the Coordination Committee took place in Brussels. The Committee discussed possibilities to improve cooperation in the sphere of nuclear energy in controlled thermonuclear fusion domain as well as to promote participation of Ukrainian institutions according to their scientific and technological potential in the field of nuclear research in the future Euratom projects within the framework of “Horizon 2020” Programme. Pursuing the dialog between Ukraine and Euratom, both sides expressed their mutual interest to conclude the Agreement on the associate participation of Ukraine in the research programmes of Euratom which are complimentary to EU “Horizon 2020” Programme, and which will provide considerable preferences to the Ukrainian institutions allowing them to participate in the research programmes on equal with the EU member states conditions.

Association Agreement
between the European Union and its Member States,
of the one part, and Ukraine, of the other part [1]

(Abstract)

TITLE V

CHAPTER 9 Cooperation in science and technology

Article 374

The Parties shall develop and strengthen their scientific and technological cooperation in order to contribute both to scientific development itself, and to reinforce their scientific potential for contributing to the resolution of national and global challenges. The Parties shall endeavour to contribute to progress in acquiring scientific and technological knowledge relevant to sustainable economic development, by strengthening their research capacities and human potential. The sharing and pooling of scientific knowledge will contribute to the competitiveness of the Parties, by increasing the ability of their economies to generate and use knowledge to commercialise new products and services. Finally, the Parties will develop their scientific potential in order to fulfil their global responsibilities and commitments in areas such as health-related issues, environmental protection including climate change and other global challenges.

Article 375

1. Such cooperation shall take into account the current formal framework for cooperation established by the Agreement on Cooperation in Science and Technology between the European Community and Ukraine, as well as the Ukrainian objective of gradual approximation to EU policy and legislation on science and technology.

2. Cooperation between the Parties shall aim at facilitating the involvement of Ukraine in the European Research Area.

3. Such cooperation shall assist Ukraine in reforming and reorganising its science management system and research institutions (including boosting its capacity for research and technological development), in order to support the development of a competitive economy and knowledge society.

Article 376

Cooperation shall take place particularly through:

(a) exchange of information on each other's science and technology policies;

(b) participation in the next EU Framework Programme for Research and Innovation Horizon 2020;

(c) joint implementation of scientific programmes and research activities;

(d) joint research and development activities aimed at encouraging scientific progress and the transfer of technology and know-how;

(e) training through mobility programmes for researchers and specialists;

(f) the organisation of joint scientific and technological development events/measures;

(g) implementation measures aimed at the development of an environment conducive to research and the application of new technologies and adequate protection of the intellectual property results of research;

(h) enhancement of cooperation at regional and international level, notably in the Black Sea context, and within multilateral organisations such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the Organisation for Economic Cooperation and Development (OECD) and the Group of 8 (G8), as well as in the context of multilateral agreements such as the UN Framework Convention on Climate Change (UNFCCC) of 1992;

(i) exchange of expertise on management of research and science institutions in order to develop and improve their capacities of conducting and participating in scientific researches.

Article 377

A regular dialogue will take place on the issues covered by Chapter 9 of Title V (Economic and Sector Co-operation) of this Agreement.

CHAPTER 23 Education, training, and youth

Article 430

Fully respecting the responsibility of the Parties for the content of teaching and the organisation of education systems and

their cultural and linguistic diversity, the Parties shall promote cooperation in the field of education, training and youth in order to enhance mutual understanding, promote intercultural dialogue and increase the knowledge of their respective cultures.

Article 431

The Parties shall undertake to intensify cooperation in the field of higher education, aiming, in particular at:

- (a) reforming and modernising the higher education systems;
- (b) promoting convergence in the field of higher education deriving from the Bologna process;
- (c) enhancing the quality and relevance of higher education;
- (d) stepping up cooperation between higher education institutions;
- (e) building up the capacity of higher education institutions;
- (f) increasing student and teacher mobility: attention will be paid to cooperation in the field of education with a view to facilitating access to higher education.

Article 432

The Parties shall endeavour to increase the exchange of information and expertise, in order to encourage closer cooperation in the field of vocational education and training with a view, in particular, to:

- (a) developing systems of vocational education and training, and further professional training throughout the working life, in response to the needs of the changing labour market;
- (b) establishing a national framework to improve the transparency and recognition of qualifications and skills drawing, where possible, on the EU experience.

Article 433

The Parties shall examine the possibility of developing their cooperation in other areas, such as secondary education, distance education, and life-long learning.

Article 434

The Parties agree to encourage closer cooperation and exchange of experience in the field of youth policy and non-formal education for young people, with the aim of:

- (a) facilitating the integration of young people into society at large by encouraging their active citizenship and spirit of initiative;

- (b) helping young people acquire knowledge, skills and competencies outside the educational systems, including through volunteering, and recognising the value of such experiences;
- (c) enhancing cooperation with third countries;
- (d) promoting cooperation between youth organisations in Ukraine and in the EU and its Member States;
- (e) promoting healthy lifestyles, with a particular focus on youth.

Article 435

The Parties shall cooperate taking into consideration the provisions of the recommendations listed in Annex XLII to this Agreement.

Article 436

A regular dialogue will take place on the issues covered by Chapter 23 of Title V (Economic and Sector Co-operation) of this Agreement.

**Report on implementation of the Association
Agenda and the Association Agreement
between the European Union and Ukraine
January – October 2015 [8]**
(Abstract)

PROGRESS IN IMPLEMENTATION OF THE ASSOCIATION
AGENDA AND THE ASSOCIATION AGREEMENT BETWEEN
THE EU AND UKRAINE

November 5, 2015¹

The Association Agreement (AA) and Association Agenda (AAg) between the European Union and Ukraine envisage the monitoring and the assessment of the Agreement, which parties can conduct jointly or separately. The report is the assessment of the Ukrainian side and has been prepared for the meeting of the Association Council.

¹ As for the results in certain areas information is provided as of 15 November 2015

The report provides an overview of the most important events and results of the AAg and the AA, which took place during January - October 2015. Furthermore, the document embraces other significant development related to the European integration policy.

The structure of the report corresponds to the structure of the Association Agenda and is supplemented by other matters regarding the implementation of both Association Agenda and Association Agreement.

Over sixty public authorities involved in the European integration process provided relevant information, which has been carefully analyzed and presented in this report.

The report aims at informing citizens of Ukraine, representatives of non-governmental organizations and the international community, including the EU institutions and its Member States, on Ukraine's progress in implementing the goals of political association and economic integration with the EU. It also gives rise to discussion and analysis of the public authorities' performance in this regard.

The novelties of the report are the examples of the successful involvement of international technical assistance in the Ukrainian reform process. Such assistance is allocated to perform tasks in the field of European integration and to implement Association Agreement.

Finally, the document summarizes the main further steps which Ukrainian government will take to continue the implementation of the Association Agenda and Association Agreement, including the draft laws registered at the Verkhovna Rada of Ukraine.

Education

➤ In the framework of reforming the system of higher education:

- **Mandatory form for higher education was cancelled** (degrees), it is envisaged that the documents shall include the information list⁵⁵. Such approach is in compliance with the European practice;

Besides, diploma supplement of European standard was approved which is produced according to the form set up by the Eu-

ropean Credit Transfer and Accumulation System, the Council of Europe and UNESCO/CEPES. The aim of this form is to increase transparency and fair approach in recognizing the academic and professional qualifications. Diploma supplement of European standard clearly defines the education system in English.

- **National Agency for Quality Assurance in Higher Education was established**⁵⁶;

The Agency is an independent collective body which will develop the requirements for the quality assurance in higher education system, analyse the quality of educational activity of institutions of higher education, and shape the quality assessment criteria of educational activity. Establishment of the Agency is a step to decentralization and deregulation of high education sphere in accordance with the best European practices.

- **European principles of forming the state educational standards** were introduced⁵⁷;

The standards formerly provided for the subject list, amount of hours within it, concrete topics necessary for lecturing. The approved amendments provide for the standards including only the categories of final competencies required for a graduating student and the framework items (total training period, final certification etc.) that will encourage the introduction of the European principle of academic autonomy of educational institutions.

- **Mandatory working off norm for graduates and reimbursement of their tuition was abolished** (except those enrolled in the specialties of medical profile)⁵⁸;
- **New orders for the recognition of high education degrees attained in foreign higher educational institutions and recognition in Ukraine the certificates** of secondary, vocational, professional education of foreign educational institutions were approved⁵⁹;

The recognition in Ukraine of foreign certificates of education now is in full compliance with the Convention on the Recognition of Qualifications Concerning Higher Education in the European Region and recommendations of this Convention. Among the main introductions in the recognition process are the following:

- Authorizing the higher educational institutions of Ukraine to carry out the procedure of recognition;

- Applying the simplified procedure of recognition for several categories of foreign educational certificates;
- Applying the method of qualification assessment and determining the equivalence by comparing the international and national qualification framework;
- Higher educational institution determines itself allowable volume of differences in academic programs defined by a comparative analysis of the curriculum content.

New orders entered into force from 26 June 2015.

- **Procedure ensuring the financial autonomy of institutions of higher and vocational education was regulated⁶⁰;**

Educational institutions are authorized to spend funds to support the educative process or update the material and technical base without the consent of the State Treasury. The universities can henceforth decide themselves where first and foremost to direct the funds after receiving the state financing or money for paid services.

Besides, **from January 2016 the Ukrainian educational institutions will acquire a right to place funds received for paid services on deposit** accounts of state banks. This will provide an opportunity to create special money funds and spend interest received for educational activity. Such practice is important for financial autonomy of educational institutions.

- **Procedure of reimbursement of state budget funds when transferring a student to study in another educational institution was regulated⁶¹;**

Calculation of the funds to be reimbursed is monitored clearly according to the government resolution formula. The amount to be reimbursed may be restructured at the request of the student; the first payment shall be at least half the amount of compensation.

Moreover, the students are guaranteed the right to retake into consideration, upon new place of study, the previous subjects and credits of the European Credit Transfer and Accumulation System (ECTS).

- **Procedure for exercising the right of the educational process participants to learn, teach, train or conduct research activities in another higher education insti-**

tution (scientific establishment) in Ukraine or abroad was regulated⁶²;

Procedure for exercising the right to participate in the academic mobility programs by all the participants of educational process was regulated, in particular:

- Kinds and forms of academic mobility have been clearly determined;
- Mechanism of considering the acquired credits on the basis of the ECTS by comparing the curriculum content regardless of the name of courses has been stipulated;
- Social guarantees for the participants of academic mobility programs have been determined (grant/wage payment, preservation of study/ work place).

- Work at the **Roadmap for Education Reform** is at closing stage. In September 2015, the document was available for public discussion on the official website of the Ministry of Education and Science.

The Roadmap for Education Reform, which was elaborated with expert participation, sets up the concrete detailed measures and establishes timeframe for reforming the educational system in Ukraine until 2025.

- Government approved a new draft law «On education».⁶³

To implement the tasks envisaged by the priority the Ukrainian side attracts expert and financial aid within the Decentralization Support in Ukraine Project (Sweden). The financing is 31.7 mln SEK for the period: 08.09.2014 – 31.12.2017.

Cooperation on youth policy

- **The Concept of the State Target Social Programme «Youth of Ukraine» for 2016 –2020 was approved⁶⁴.**

The Concept, in accordance with the provisions on youth policy of the Association Agreement, the priorities of the State Target Social Programme «Youth of Ukraine» includes, in particular:

- Public position formation;
- Healthy and safe lifestyle;

- Development of non-formal education;
- Youth employment.

Besides, the partner support for young people living in the temporary occupied territory of Ukraine, and internally displaced persons is determined as a priority of this Programme.

The draft State Target Social Programme «Youth of Ukraine» for 2016 – 2020 is available on the website of the Ministry of Youth and Sports for public discussion.

- The Association Agreement stipulates for cooperation of the sides in the sphere of non-formal education.

With the purpose of **introducing the relevant legislative regulation of non-formal education into the Ukrainian legislation** a draft Law of Ukraine «On Amendments to Certain Laws of Ukraine (on the recognition of non-formal education)» was registered (reg. № 2121).

The draft Law provides for the recognition of non-formal and informal education (self-organized, self-education) as varieties of education in Ukraine, recognition of non-formal education acquired by the volunteers in organizations and institutions and securing of the volunteers' right for consideration of the fact of obtaining non-formal education when becoming a civil servant.

- In the framework of the «Youth in Action» Programme the **European Commission has allocated extra funding for the support of the Eastern Partnership states cooperation in 2016 in the form of initiatives «The Eastern Partnership Youth Window».**

«The Window» will give six Eastern Partnership participant-states a chance, in particular for Ukraine, to attract extra funding aimed at supporting the youth measures and projects and to apply for implementation of such projects directly in the Eastern Partnership states.

Cooperation on science and technology

- **The Agreement** (in form of exchange of notes) between Ukraine and the European Union **on the renewal of the**

Agreement between Ukraine and the EU on scientific and technological cooperation (the Law of Ukraine № 602-VIII) **was ratified** on July 15, 2015.

The Agreement establishes a legal framework and defines the major principles, areas and forms of Ukraine-EU cooperation in the field of scientific and technological research. To ensure coordination and promote of cooperation in the framework of the Agreement acts a joint committee.

- The **Agreement between Ukraine and the EU on Ukraine's participation in the EU Program «Horizon 2020»** – Framework Program on Research and Innovation (2014-2020)⁶⁵ (the Law of Ukraine № 604-VIII) was ratified on July 15, 2015. The main priorities of the Programme «Horizon 2020» are:
 - Promotion to fundamental scientific research;
 - Increasing the competitiveness of the industry sector;
 - Development of ICT, nanotechnologies, new materials science, biotechnologies and space industry;
 - Solution of the most pressing social challenges in health, ecology and demography.

The total amount of funding in support for research and innovation in the framework of the Programme is about 80 bln EUR.

Associated participating in the program will expand opportunities for participation of Ukrainian scientists, universities, research organizations in joint European researches and promote the development of partnership relations in science and research between Ukraine and the EU.

On October 13, 2015, the European Commission approved topics and tender procedure of the Programme “Horizon 2020” for the years 2016-2017 with a budget of 16 billion EUR. The funds will be allocated over two years through calls for proposals, tenders, awards, and other funding instruments that totally cover over 600 topics. The relevant calls for 2016 started.

- In order to expand cooperation with the EU in research and technology as well as to raise awareness about «Horizon 2020» **created contact points of this Programme**

at higher educational establishments, scientific institutions, enterprises and public organizations.

- In order to improve legislation in the field of scientific and technical activities, its approximation to the principles governing this area in the EU Member States, **a new edition of the Law of Ukraine «On scientific and technical activity»** (*reg. № 2244a*) was developed and submitted to the Verkhovna Rada of Ukraine. The draft law is aimed at:
 - Introduction of new organizational forms and infrastructure of scientific and technical activities;
 - Ensuring the efficiency and transparency of scientific researches (developments) and their financing;
 - Increasing efficiency of interaction between members of the scientific community, governmental agencies and the real economy in the formation and implementation of joint state policy in the field of scientific and technical activities;
 - Establishment of common legal principles for the commercialization of results in basic researches, applied researches, scientific and technical (experimental) developments carried out by public research institutions.

- Consultations **on Ukraine's associated participation in research and training programs of Euratom** (within the EU Program «Horizon 2020») continues. The size of Ukraine's contribution to the budget of the Program is currently being discussed.

Information Days of research and training program Euratom were held in Kharkiv on September 8-9, 2015. During these events, the representatives of the European Commission presented the perspective research directions on 2016-2017 in the field of nuclear energy, nuclear safety and nuclear synthesis.

- **Mandatory sale of foreign currency for projects under the agreements on Ukraine's participation in international programs of the EU were cancelled**⁶⁶.

From now, the requirement for mandatory sale of foreign exchange earnings in the interbank market does not apply to projects that are carried out based on agreements on Ukraine's participation in international programs of the EU. In addition, this no longer applies to grants of legal entities-residents received from international financial institutions.

Agreement for scientific and technological co-operation between the European Community and Ukraine [2]

Objective of Agreement. To establish broader collaboration in science and technology between the European Community and Ukraine in the framework of the global cooperation between the two parties.

Remarks. Concluded for an initial period ending 31 December 2002 it is renewable every five years.

The Agreement is based on the principles of mutual benefit, reciprocal opportunities for access to programmes and activities, non-discrimination, and the effective protection of intellectual property, and equitable sharing of intellectual property rights.

It provides for:

- participation of Ukrainian entities in Community projects, in the areas of cooperative activities, and a reciprocal participation of entities established in the Community in Ukrainian projects in those areas. Projects may also include a Party's scientific and technological organisations and may also be undertaken in cooperation with the Agencies and official bodies of the parties;
- free access to, and shared use of research facilities, including installations and sites for monitoring, observation and experimentation, as well as data collection, relevant to the cooperative activities;
- visits and exchanges of scientists, engineers or other personnel for the purposes of participating in seminars, symposia and workshops relevant to cooperation under the Agreement;

- exchange of information on practices, legislation, regulations and programmes relevant to cooperation under this Agreement;
- other activities as may be determined by the Joint Community-Ukraine Committee in accordance with the applicable policies and programmes of the Parties;
- the endorsement by the Parties of Technology Management Plans as a condition for research projects to proceed, as described in the Annex to the Agreement;
- co-operation activities to be subject to the availability of funds and to the applicable laws and regulations, policies and programmes of Ukraine and the Community; no transfer of funds will take place.

The dissemination and utilisation of information and the management, allocation and exercise of intellectual property rights resulting from joint research under the Agreement will be subject to the provisions in this Agreement.

COUNCIL DECISION

of 6 February 2003

concerning the conclusion of the Agreement for scientific and technological cooperation between the European Community and Ukraine

(2003/96/EC)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular the second subparagraph of Article 170, in conjunction with Article 300(2), first sentence of the first subparagraph, and Article 300(3), first subparagraph, thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

Having regard to the opinion of the European Parliament ⁽²⁾,

Whereas:

- (1) A Partnership and Cooperation Agreement between the European Communities and their Member States of the one part, and Ukraine of the other part ⁽³⁾, was signed on 16 June 1994 and has entered into force on 1 March 1998.
- (2) A European Council Common Strategy (1999/877/CFSP) on Ukraine ⁽⁴⁾ was adopted on 11 December 1999 at the Helsinki European Council.
- (3) The European Community and Ukraine are pursuing specific RTD programmes in areas of common interest. On the basis of past experience, both sides have expressed a desire to establish a deeper and broader framework for the conduct of collaboration in science and technology. This cooperation agreement in the field of science and technology forms part of the global cooperation between the European Community and Ukraine.
- (4) By its Decision of 8 October 2001, the Council authorised the Commission to negotiate on behalf of the European Community an Agreement for scientific and technological cooperation between the European

Community and Ukraine. The negotiations, conducted in line with the negotiating directives, resulted in the attached Agreement and its two annexes.

- (5) The Agreement was signed on 4 July 2002 in Copenhagen.
- (6) The Agreement should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Agreement for scientific and technological cooperation between the European Community and Ukraine is hereby approved on behalf of the Community.

The text of the Agreement and its two Annexes is attached to this Decision.

Article 2

The President of the Council shall, on behalf of the Community, give the notification provided for in Article 12 of the Agreement.

Done at Brussels, 6 February 2003.

For the Council
The President
 P. EFTHYMIOU

⁽¹⁾ Proposal of 11.10.2002 (not yet published in the Official Journal).

⁽²⁾ Opinion delivered on 17 December 2002 (not yet published in the Official Journal).

⁽³⁾ OJ L 49, 19.2.1998, p. 3.

⁽⁴⁾ OJ L 331, 23.12.1999, p. 1.

AGREEMENT

on cooperation in science and technology between the European Community and Ukraine

THE EUROPEAN COMMUNITY,

(hereinafter 'the Community'), of the one part, and

UKRAINE,

of the other part,

hereinafter referred to as the 'Parties',

CONSIDERING the importance of science and technology for their economic and social development,

RECOGNISING that the Community and Ukraine are pursuing research and technological activities in a number of areas of common interest, and that participation in each other's research and development activities on a basis of reciprocity will provide mutual benefits,

HAVING REGARD to the Partnership and Cooperation Agreement concluded between the European Communities and their Member States, of the one part, and Ukraine, of the other part, signed on 16 June 1994, and in particular to Article 58 thereof,

DESIRING to establish a formal basis for cooperation in scientific and technological research which will extend and strengthen the conduct of cooperative activities in areas of common interest and encourage the application of the results of such cooperation to the economic and social benefits of the Parties,

HAVE AGREED AS FOLLOWS:

Article 1

Purpose

The Parties shall encourage, develop and facilitate cooperative activities in fields of common interest where they are pursuing research and development activities in science and technology.

Article 2

Definitions

For the purpose of this Agreement:

- (a) 'Cooperative activity' means any activity which the Parties undertake or support pursuant to this Agreement, and includes joint research;
- (b) 'Information' means scientific or technical data, results or methods of research and development stemming from joint research and any other data relating to cooperative activities;
- (c) 'Intellectual property' shall have the meaning defined in Article 2 of the Convention establishing the World Intellectual Property Organisation, done at Stockholm on 14 July 1967;
- (d) 'Joint research' means research implemented with financial support from one or both Parties and that involves collaboration by participants from both the Community and Ukraine;
- (e) 'Participant' means any person, legal entity, university, research institute or any other body participating in a cooperative activity, including, where appropriate, Agencies and official bodies of the Parties themselves.

Article 3

Principles

Cooperative activities shall be conducted on the basis of the following principles:

- (a) mutual benefit;
- (b) timely exchange of information which may affect cooperative activities;
- (c) balanced realisation of economic and social benefits by the Community and Ukraine in view of the contribution made to cooperative activities by the respective participants and/or Parties.

Article 4

Areas of cooperative activities

- (a) Cooperation may be pursued in research, technological development and demonstration activities, including basic research, in the following:
 - environment and climate research, including earth observation,
 - biomedical and health research,
 - agriculture, forestry and fisheries research,
 - industrial and production technologies,
 - materials research and metrology,
 - non-nuclear energy,
 - transportation,
 - information society technologies,
 - social sciences research,
 - science and technology policy,
 - training and exchange of scientists.

- (b) Other areas may be added to this list upon review and recommendation by the Joint Community-Ukraine Committee mentioned in Article 6 of this Agreement.

Article 5

Forms of cooperative activities

- (a) Cooperation may include the following activities:
1. participation of Ukrainian entities in Community projects, in the areas of cooperative activities, and a reciprocal participation of entities established in the Community in Ukrainian projects in those areas. Such participation shall be subject to the laws, rules, regulations and procedures in force for each Party. Projects may also include a Party's scientific and technological organisations; projects may also be undertaken in cooperation with the Agencies and official bodies of the Parties;
 2. free access to, and shared use of research facilities, including installations and sites for monitoring, observation and experimentation, as well as data collections, relevant to the cooperative activities;
 3. visits and exchanges of scientists, engineers, or other appropriate personnel for the purposes of participating in seminars, symposia and workshops relevant to cooperation under this Agreement;
 4. exchange of information on practices, legislation, regulations and programmes relevant to cooperation under this Agreement;
 5. other activities as may be mutually determined by the Parties in accordance with the applicable policies and programmes of the Parties.
- (b) Joint research projects shall proceed under this Agreement only after the participants in a project have concluded a joint technology management plan, as indicated in the Annex 1 to this Agreement which forms an integral part thereof.
- (c) The Parties may jointly pursue cooperative activities with third parties.

Article 6

Coordination and promotion of cooperative activities

- (a) In order to coordinate and facilitate cooperation activities under this Agreement the Parties will establish a Joint Community-Ukraine Committee on cooperation in the field of science and technology, hereinafter called the 'Committee'.

The Committee shall meet in the framework of the relevant Sub-Committee established under the Partnership and Cooperation Agreement between the European Communities and their Member-States, and Ukraine.

- (b) The function of the Committee shall include:
1. overseeing and promoting the activities envisaged under the Agreement;
 2. making recommendations pursuant to Article 4(b);
 3. proposing activities pursuant to Article 5, 5(a);
 4. advising the Parties on ways of enhancing cooperation consistent with the principles set out in this Agreement;
 5. providing an annual report on the status and effectiveness of cooperation undertaken under this Agreement;
 6. reviewing the efficient and effective functioning of the Agreement;
 7. taking account of the importance of regional aspects of the cooperation.
- (c) The Committee shall meet once a year, meetings being held alternately in the Community and Ukraine. Extraordinary meetings may be held as mutually agreed.
- (d) The Committee shall consist of a limited equal number of official representatives of each Party; it shall establish its own rules of procedure, subject to approval by the Parties. Decisions of the Committee shall be reached by consensus. Minutes, comprising a record of decisions and principal points discussed, shall be taken at each meeting and shall be agreed by those persons selected from each side to chair jointly the meeting. The Committee annual report will be submitted to the Cooperation Council and the Cooperation Committee established under the Partnership and Cooperation Agreement between the European Communities and their Member States, and Ukraine, and appropriate authorities of each Party.

Article 7

Funding and taxes exemptions

- (a) Cooperative scientific and technological activities shall be subject to the availability of funds and to the applicable laws and regulations, policies and programmes of the Community and Ukraine. As a rule, each Party shall bear the costs of discharging its responsibilities under this Agreement, including costs of participation in meetings of the Committee.
- (b) When specific scientific and technological cooperative forms benefit from financial support of the European Community, either directly or indirectly through organisations set up with the participation of the European Community, provided to participants of Ukraine, any such grants, financial or other contributions from the European Community to participants of Ukraine in support of their scientific and technological activities, shall be granted tax and customs preferences. Any such grants shall be exempt by Ukraine from customs payments, any customs duties and fees, value added taxes, income taxes and any other taxes and duties of an equivalent effect.

*Article 8***Entry of personnel and equipment**

Each Party shall take all reasonable steps and use its best efforts, in accordance with its laws and regulations, to facilitate entry to, stay in and exit from its territory of persons, material, data and equipment involved in or used in cooperative activities under this Agreement.

*Article 9***Information and intellectual property**

The dissemination and utilisation of information, and management, allocation and exercise of intellectual property rights, resulting from joint research under this Agreement, shall be subject to the provisions of Annex 2 to this Agreement.

*Article 10***Other agreements and transitional provisions**

1. This Agreement is without prejudice to other existing Agreements or arrangements between the Parties or any Agreement or arrangement between the Parties and third parties.
2. The Parties shall endeavour to bring under the terms of this Agreement those existing arrangements for scientific and technological cooperation between the Community and Ukraine that fall under the scope of Article 4 of this Agreement.

*Article 11***Territorial application**

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Community is applied and under the conditions laid down in that Treaty, and on the other hand, to the territory of Ukraine. This shall not

prevent the conduct of cooperative activities on the high seas, outer space on the territory of third countries, in accordance with international laws.

*Article 12***Entry into force, termination, settlement of disputes**

- (a) This Agreement shall enter into force on the date on which the Parties have notified each other in writing that their respective internal procedures necessary for its entry into force have been completed.
- (b) This Agreement shall be concluded for an initial period ending 31 December 2002 and will be renewable by common agreement between the Parties for additional periods of five years.
- (c) This Agreement can be terminated at any time by either Party upon a six month's written notice. The expiration or termination of this Agreement shall not affect the validity or duration of any arrangements made under it, or any specific rights and obligations that have accrued in compliance with the Annexes.
- (d) This Agreement may be amended by the written agreement of the Parties. Amendments shall enter into force on the date on which the Parties have notified each other in writing that their respective internal procedures necessary for amending this Agreement have been completed.
- (e) All disputes related to the interpretation or implementation of this Agreement shall be settled by mutual agreement between the Parties.

Article 13

This Agreement is drawn up in duplicate in the Danish, Dutch, English, Finnish, French, German, Greek, Italian, Portuguese, Spanish, Swedish and Ukrainian languages, each of these texts being equally authentic.

Hecho en Copenhague, el cuatro de julio de dos mil dos.

Udfærdiget i København den fjerde juli to tusind og to.

Geschehen zu Kopenhagen am vierten Juli zweitausendundzwei.

Έγινε στην Κοπεγχάγη, στις τέσσερις Ιουλίου δύο χιλιάδες δύο.

Done at Copenhagen on the fourth day of July in the year two thousand and two.

Fait à Copenhague, le quatre juillet deux mille deux.

Fatto a Copenaghen, addì quattro luglio duemiladue.

Gedaan te Kopenhagen, de vierde juli tweeduizendtwee.

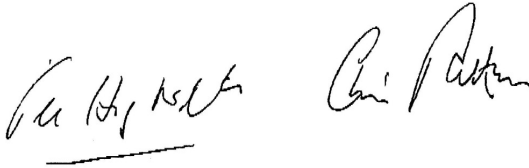
Feito em Copenhaga, em quatro de Julho de dois mil e dois.

Tehty Kööpenhaminassa neljäntenä päivänä heinäkuuta vuonna kaksituhattakaksi.

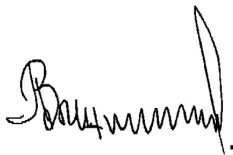
Som skedde i Köpenhamn den fjärde juli jugohundratvå.

Вчинено в м. Копенгагені “04 “ липня 2002 року.

Por la Comunidad Europea
 For Det Europæiske Fællesskab
 Für die Europäische Gemeinschaft
 Για την Ευρωπαϊκή Κοινότητα
 For the European Community
 Pour la Communauté européenne
 Per la Comunità europea
 Voor de Europese Gemeenschap
 Pela Comunidade Europeia
 Euroopan yhteisön puolesta
 På Europeiska gemenskapens vägnar
За Європейське Співтовариство



Por Ucraina
 På Ukraines vegne
 Für die Ukraine
 Για την Ουκρανία
 For Ukraine
 Pour l'Ukraine
 Per l'Ucraina
 Voor Oekraïne
 Pela Ucrânia
 Ukrainan puolesta
 För Ukraina
За Україну



ANNEX I

INDICATIVE FEATURES OF A TECHNOLOGY MANAGEMENT PLAN

The Technology Management Plan (TMP) is a specific agreement to be concluded between the participants about the implementation of joint research and the respective rights and obligations of the participants.

With respect to intellectual property, the TMP will normally address, among other things, ownership, protection, user rights for research and development purposes, exploitation and dissemination, including arrangements for joint publication, the rights and obligations of visiting researchers and dispute settlement procedures. The TMP may also address foreground and background information, licensing and deliverables.

The TMPs shall be developed taking into account the aims of the joint research, the relative financial or other contributions of the Parties or participants, the advantages and disadvantages of licensing by territory or for fields of use, the transfer of export-controlled data, goods or services, requirements imposed by the applicable laws and other factors deemed appropriate by the participants.

ANNEX 2

INTELLECTUAL PROPERTY RIGHTS

Pursuant to Article 9 of the present Agreement, rights to information and intellectual property created or furnished under the Agreement shall be allocated as provided in this Annex.

I. Application

This Annex is applicable to joint research undertaken pursuant to this Agreement, except as otherwise agreed by the Parties.

II. Ownership, allocation and exercise of rights

1. This Annex addresses the allocation of rights and interests of the Parties and their participants. Each Party and its participants shall ensure that the other Party and its participants may obtain the rights to intellectual property allocated to it in accordance with this Annex. This Annex does not otherwise alter or prejudice the allocation of rights, interests and royalties between a Party and its nationals or participants, which shall be determined by the laws and practices applicable to each Party.
2. The following principles shall apply and shall be provided for in the contractual arrangements:
 - (a) adequate protection of intellectual property. The Parties and/or their participants, as appropriate, shall ensure that they notify one another within a reasonable time of the creation of any intellectual property arising under this Agreement or implementing arrangements and to seek protection for such intellectual property in a timely fashion;
 - (b) taking account of the contributions of the Parties or their participants in determining the rights and interests of the Parties and participants;
 - (c) effective exploitation of results;
 - (d) non-discriminatory treatment of participants from the other party as compared with the treatment given to its own participants;
 - (e) protection of confidential information.
3. The participants shall jointly develop a Technology Management Plan (TMP) in respect of the ownership and use, including publication, of information and intellectual property to be created in the course of joint research. The indicative features of a TMP are contained in the Annex 1 to this Agreement. The TMP shall be approved by the responsible funding agency or department of the Party involved in financing the research, before the conclusion of the specific research and development cooperation contracts to which they are attached.
4. Information or intellectual property created in the course of joint research and not addressed in the TMP shall be allocated, with the approval of the Parties, according to the principles set out in the TMP. In case of disagreement, such information or intellectual property shall be owned jointly by all the participants involved in the joint research from which the information or intellectual property results. Each participant to whom this provision applies shall have the right to use such information or intellectual property for his own exploitation with no geographical limitation.
5. While maintaining the conditions of competition in areas affected by the Agreement, each Party shall endeavour to ensure that rights acquired pursuant to this Agreement and arrangements made under it are exercised in such a way as to encourage, in particular:
 - (a) the dissemination and use of information created, disclosed or otherwise made available, under the Agreement, and
 - (b) the adoption and implementation of international technical standards.
6. Termination or expiry of this Agreement shall not affect rights or obligations under this Annex.

III. Copyright works

Contractual and other implementing arrangements shall provide for treatment of copyright belonging to the Parties or to their participants consistent with the Berne Convention for the protection of literary and artistic work (Paris Act 1971).

IV. Scientific literary works

Without prejudice to Section V, and unless otherwise agreed in the TMP, publication of results of research shall be made jointly by the Parties or participants to that joint research. Subject to the foregoing general rule, the following procedures shall apply:

1. In the case of publication by a Party or public bodies of that Party of scientific and technical journals, articles, reports, books, including video and software arising from joint research pursuant to this Agreement, the other Party or public bodies of that Party shall be entitled within the limits specified within the TMP to a worldwide, non-exclusive, irrevocable, royalty-free licence to translate, reproduce, adapt, transmit and publicly distribute such works.
2. The Parties shall ensure that literary works of a scientific character arising from joint research pursuant to this Agreement shall be disseminated as widely as possible.
3. All copies of a copyright work to be publicly distributed and prepared under this provision shall indicate the names of the author(s) of the work unless an author(s) explicitly declines to be named. They shall also bear a clearly visible acknowledgement of the cooperative support of the Parties.

V. Undisclosed information

A. Documentary undisclosed information

1. Each Party and its participants, as appropriate, shall identify at the earliest possible moment and preferably in the technology management plan the information that they wish to remain undisclosed, taking into account, *inter alia*, the following criteria:
 - (a) confidentiality of the information in the sense that it is not, as a body or in the precise configuration or assembly of its components, generally known among or readily accessible by lawful means to experts in the field;
 - (b) the actual or potential commercial value of the information by virtue of its confidentiality;
 - (c) previous protection of the information in the sense that it has been subject to steps that were reasonable under the circumstances by the person lawfully in control, to maintain its confidentiality.

The Parties and their participants, as appropriate, may in certain cases agree that, unless otherwise indicated, parts or all of the information provided, exchanged or created in the course of joint research may not be disclosed.

2. Each Party shall ensure that it and its participants clearly identify undisclosed information, for example by means of an appropriate marking or restrictive legend. This also applies to any reproduction of the said information, in whole or in part.

A Party and a participant receiving undisclosed information shall respect the privileged nature thereof. These limitations shall automatically terminate when this information is disclosed by the owner into the public domain.

3. Undisclosed information communicated under the Agreement and received from the other Party, may be disseminated by the receiving Party to persons within or employed by the receiving Party and other concerned departments or agencies of the receiving Party authorised for the specific purposes of the joint research underway, provided that any undisclosed information so disseminated shall be pursuant to an agreement of confidentiality and shall be readily recognisable as such, as set out above.
4. With the prior written consent of the Party providing undisclosed information, the receiving Party may disseminate such undisclosed information more widely than otherwise permitted in point 3 of the present section. The Parties shall cooperate in developing procedures for requesting and obtaining prior written consent for such wider dissemination, and each Party will grant such approval to the extent permitted by its domestic policies, regulations and laws.

B. Non-documentary undisclosed information

Non-documentary undisclosed or other confidential information provided in seminars and other meetings arranged under this Agreement, or information arising from the attachment of staff, use of facilities, or joint projects, shall be treated by the Parties or their participants according to the principles specified for documentary information in this Annex provided however that the recipient of such undisclosed or other confidential or privileged information has been made aware of the confidential character of the information communicated at the time such communication is made.

C. Control

Each Party shall endeavour to ensure that undisclosed information received by it under this Agreement shall be controlled as provided herein. If one of the Parties becomes aware that it will be, or may be reasonably expected to become, unable to meet the non-dissemination provisions of subsections A and B of the present Section, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

COMMISSION

COMMISSION DECISION

of 31 January 2003

concerning the validity of certain binding tariff information (BTI) issued by the Federal Republic of Germany

(notified under document number C(2003) 77)

(Only the German text is authentic)

(2003/97/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code (⁽¹⁾), as last amended by Regulation (EC) No 2700/2000 (⁽²⁾), and in particular Article 12(5)(a)(iii) and Article 248 thereof,

Having regard to Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Common Customs Code (⁽³⁾), as last amended by Regulation (EC) No 444/2002 (⁽⁴⁾) and in particular Article 9 thereof,

Whereas:

(1) In order to ensure uniform application of the Combined Nomenclature (CN) annexed to Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff (⁽⁵⁾), the Commission adopted Regulation (EC) No 1223/2002 (⁽⁶⁾) clarifying and confirming the classification of the products described below as frozen poultrymeat of heading 0207, under CN subheading 0207 14 10: 'Boneless chicken cuts, frozen and impregnated with salt in all parts. They have a salt content by weight of 1,2 % to 1,9 %. The product is deep-frozen and has to be stored at a temperature of lower than -18 °C to ensure conservation for at least one year'.

(2) This classification was adopted for the following reason: 'Classification is determined by the provisions of General Rules 1 and 6 for the interpretation of the Combine Nomenclature and by the wording of CN codes 0207 0207 14 and 0207 14 10. The product is chicken meat frozen for long-term conservation. The addition of salt does not alter the character of the product as frozen meat of heading 0207'.

(3) Following publication of the above Regulation on 9 July 2002 (⁽⁷⁾), all binding tariff information (BTIs) previously issued by Member States classifying the product concerned as salted meat of heading 0210 ceased to be valid.

(4) Based on this Regulation, some Member States later issued BTIs for frozen products of the same kind containing 2 % to 2,7 % salt under heading 0207.

(5) A number of cases subsequently came to light in which Germany had issued BTIs classifying frozen products of this kind containing between 1,9 % and 3 % by weight of salt under heading 0210.

(6) In so doing, Germany failed to take account of the fact that the classification regulation constitutes the application of a general rule to a particular case, and that it contains guidance on the interpretation of the rule which can be applied by the authority responsible for the classification of an identical or similar product.

(7) Products also consisting of boneless chicken cuts which have been frozen for long-term conservation and have a salt content of 1,9 % to 3 % are similar to the products covered by Regulation (EC) No 1223/2002. The addition of salt in such quantities is not such as to alter the products' character as frozen poultry meat of heading 0207.

(⁽¹⁾) OJ L 302, 19.10.1992, p. 1.

(⁽²⁾) OJ L 311, 12.12.2000, p. 17.

(⁽³⁾) OJ L 253, 11.10.1993, p. 1.

(⁽⁴⁾) OJ L 68, 12.3.2002, p. 11.

(⁽⁵⁾) OJ L 256, 7.9.1987, p. 1.

(⁽⁶⁾) OJ L 179, 9.7.2002, p. 8.

(⁽⁷⁾) OJ L 179, 9.7.2002, p. 8.

- (8) In order to safeguard equality between operators, which would be endangered if like cases were not treated alike, and to ensure uniform application of the CN, the BTIs issued by Germany on frozen poultry meat containing between 1,9 % and 3 % salt, listed in the annex, must be withdrawn.
- (9) Pursuant to Article 14(1) of Regulation (EC) No 2454/93, the holder of the BTIs concerned may make use of the possibility of invoking BTIs which have ceased to be valid during a given period.
- (10) The Customs Code Committee has not issued an opinion within the time limit set by its chairman.

HAS ADOPTED THIS DECISION:

Article 1

The binding tariff information notices listed in column 1 of the table annexed issued by the customs authorities shown in column 2 for the tariff classification shown in column 3 must be withdrawn at the earliest possible date and in any case not later than 10 days from the notification of this decision.

Article 2

This Decision is addressed to the Federal Republic of Germany.

Done at Brussels, 31 January 2003.

For the Commission
Pascal LAMY
Member of the Commission

ANNEX

Binding tariff information Reference no	Customs authority	Tariff classification
1	2	3
DE HH/734/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/779/02-1	- Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/790/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/795/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/827/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/828/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/854/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/873/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/874/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/875/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/876/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/880/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/881/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/882/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/918/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/920/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/921/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/973/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99
DE HH/991/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/994/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/995/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99
DE HH/996/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/997/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/998/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/999/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1000/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1001/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1002/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1003/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1004/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1005/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1006/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1007/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1008/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39

Binding tariff information Reference no	Customs authority	Tariff classification
1	2	3
DE HH/1009/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99
DE HH/1017/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1018/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1019/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1020/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1038/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1047/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1076/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1081/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1082/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1083/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1091/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1092/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1142/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1143/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1144/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1164/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1165/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1170/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1207/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1208/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1232/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1233/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1234/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1235/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1236/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1237/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1238/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1239/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1240/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1241/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39
DE HH/1242/02-1	Oberfinanzdirektion Hamburg, ZPLA	0210 99 39

CORRIGENDA

Corrigendum to Commission Regulation (EC) No 118/2003 of 23 January 2003 fixing the export refunds on beef and veal and amending Regulations (EEC) No 3846/87 establishing an agricultural product nomenclature for export refunds and (EC) No 1445/97 on rules of application for import and export licences in the beef and veal sector

(Official Journal of the European Communities L 20 of 24 January 2003)

On page 4 in Article 2, third line:

for: '... product CN code ...',

read: '... product code ...'.

Structure and priority directions **of the EU Research and Innovation Programme**

Horizon 2020

Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market [4].

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness.

Seen as a means to drive economic growth and create jobs, Horizon 2020 has the political backing of Europe's leaders and the Members of the European Parliament. They agreed that research is an investment in our future and so put it at the heart of the EU's blueprint for smart, sustainable and inclusive growth and jobs.

By coupling research and innovation, Horizon 2020 is helping to achieve this with its emphasis on excellent science, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation.

Horizon 2020 is open to everyone, with a simple structure that reduces red tape and time so participants can focus on what is really important. This approach makes sure new projects get off the ground quickly – and achieve results faster.

The EU Framework Programme for Research and Innovation will be complemented by further measures to complete and further develop the European Research Area. These measures will aim at breaking down barriers to create a genuine single market for knowledge, research and innovation.

Horizon 2020 sections:

1. Excellent Science

Activities under this Pillar aim to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale [4].

The Excellent Science pillar has main four specific objectives:

a. The European Research Council (ERC) will provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

b. Future and emerging technologies will support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. They will foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union-wide structuring of the corresponding scientific communities.

c. Marie Skłodowska-Curie Actions will provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers to best prepare them to face current and future societal challenges.

d. Research infrastructure (including e-infrastructures) will develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and comple-

ment this with the related Union policy and international cooperation.

Together, these objectives form a powerful and balanced set of activities which, in concert with activities at national and regional levels, span the breadth of Europe's needs regarding advanced science and technology. Bringing them together in a single programme will enable them to operate with greater coherence, in a rationalised, simplified and more focused way, while maintaining the continuity which is vital to sustain their effectiveness.

The activities are inherently forward-looking, building skills in the long term, focusing on the next generation of science, technology, researchers and innovations and providing support for emerging talent from across the whole of the Union and associated countries, as well as worldwide. In view of their science-driven nature and largely 'bottom-up', investigator-driven funding arrangements, the European scientific community will play a strong role in determining the avenues of research followed under the programme [4].

2. Industrial Leadership

This pillar aims to speed up development of the technologies and innovations that will underpin tomorrow's businesses and help innovative European SMEs to grow into world-leading companies.

It consists of three specific objectives:

a. "Leadership in enabling and industrial technologies" will provide dedicated support for research, development and demonstration and, where appropriate, for standardisation and certification, on information and communications technology (ICT), nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies and their relations to societal challenges. User needs will be taken into account in all these fields.

b. "Access to risk finance" will aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the equity instrument of the Programme for the

Competitiveness of Enterprises and small and medium-sized enterprises (COSME) (2014-2020) it will support the development of Union-level venture capital.

c. “Innovation in SMEs” will provide SME-tailored support to stimulate all forms of innovation in SMEs, targeting those with the potential to grow and internationalise across the single market and beyond.

The goal is to make Europe a more attractive location to invest in research and innovation (including eco-innovation), by promoting activities where businesses set the agenda. It will provide major investment in key industrial technologies, maximise the growth potential of European companies by providing them with adequate levels of finance and help innovative SMEs to grow into world-leading companies.

3. Societal Challenges

Horizon 2020 reflects the policy priorities of the Europe 2020 strategy and addresses major concerns shared by citizens in Europe and elsewhere.

A challenge-based approach will bring together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities. This will cover activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake. It will include establishing links with the activities of the European Innovation Partnerships (EIP).

Funding will focus on the following challenges:

- a. Health, demographic change and wellbeing;
- b. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- c. Secure, clean and efficient energy;
- d. Smart, green and integrated transport;
- e. Climate action, environment, resource efficiency and raw materials;
- f. Europe in a changing world – inclusive, innovative and reflective societies;

- g. Secure societies – protecting freedom and security of Europe and its citizens.

4. Spreading Excellence and Widening Participation

Maximising investment in research and innovation will enable the European Research Area to function in a more streamlined and homogeneous way, allowing the individual strengths of each Member State to be optimised.

Despite serious efforts deployed at national and European level, the European Union sees significant internal disparities in terms of research and innovation performance as also identified in the Innovation Union Scoreboard. These trends are further exacerbated by the continuing severe financial crisis, and the subsequent adverse effects on public research and innovation budgets.

In order to address these challenges, Horizon 2020 introduces specific measures for spreading excellence and widening participation. These measures are targeted at low-performing Member States in terms of research and innovation, and they will be implemented by the Member States most in need of the new Cohesion policy for the 2014-2020 programming period.

- a. The **Teaming** action (associating advanced research institutions to other institutions, agencies or regions for the creation or upgrade of existing centres of excellence) is a new feature under Horizon 2020. It will provide new opportunities to the parties involved, with real prospects for growth through tapping into new collaboration and development patterns, including the establishment of new scientific networks, links with local clusters and opening up access to new markets. This will offer national and local research new possibilities for exploitation and value creation and boost the innovation potential of the countries involved.
- b. **Twinning** will help strengthen a defined field of research in a knowledge institution through linking with at least two internationally-leading counterparts in Europe.
- c. The **ERA Chairs** scheme will provide support for universities and other research institutions to attract and maintain high quality human resources and implement the

structural changes necessary to achieve excellence on a sustainable basis.

- d. The **Policy Support Facility** will aim to improve the design, implementation and evaluation of national/regional research and innovation policies. It will offer expert advice to public authorities at national or regional level on a voluntary basis, covering the needs to access the relevant body of knowledge, benefit from the insight of international experts, use state of the art methodologies and tools, and receive tailor-made advice.
- e. Supporting access to international networks for excellent researchers and innovators who lack sufficient involvement in European and international networks. This will include support provided through **COST**.
- f. Strengthening the administrative and operational capacity of transnational networks of **National Contact Points** will allow financial and technical support and ensure the flow of information between them and the Horizon 2020 implementation bodies.

By 1 December 2014 the first 100 calls had closed. A **proposal** is submitted by one or more applicants. Proposals could have just one applicant – a single principal investigator - while multi-partner proposals group together many applicants. An **applicant** might also be involved in more than one proposal, in which case it is making multiple **applications** for funding.

Some calls have **two stages**: applicants first submit outline proposals which are evaluated to select those that could be developed further into full proposals. The statistics on proposals presented here refer only to **full proposals**.

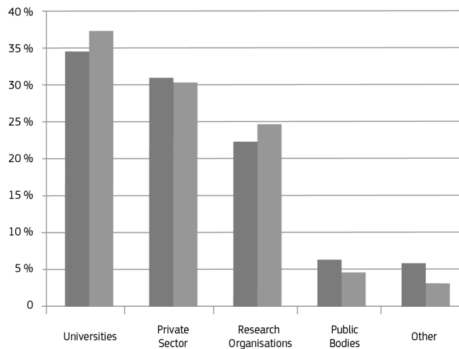
If the proposal is successful and is funded it becomes a **project**, which is implemented by one or more **participants**. And a participant might be involved in other projects, in which case it has a number of **participations**.

The **overall success rate** of eligible full proposals is around 14%, compared with around 20% for the whole of FP7. It should be noted, however, that less funding was available in 2014, the first year of Horizon 2020, compared with 2013, the last year of FP7. At the same time, there was increased interest from poten-

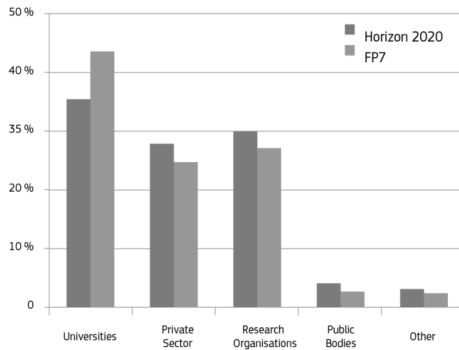
tial applicants in the new programme, demonstrated by the fact that 38% of successful applicants were **newcomers**.

Figure 2.1

Share of participations in signed grant agreements per type of organisation:
Horizon 2020 compared with FP7



Share of EU financial contribution in signed grant agreements per type of organisation:
Horizon 2020 compared with FP7



Note: Horizon 2020 data is for 2014; FP7 data is for 2007-2013 [4].



EUROPEAN COMMISSION

Brussels, 30.11.2011
COM(2011) 808 final

**COMMUNICATION FROM THE COMMISSION TO
THE EUROPEAN PARLIAMENT, THE COUNCIL,
THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE
AND THE COMMITTEE OF THE REGIONS**

Horizon 2020 - The Framework Programme for Research and Innovation

(Text with EEA relevance)

{SEC(2011) 1427 final}

{SEC(2011) 1428 final}

A changed context [5]

Since the launch of the Seventh Framework Programme (FP7), the economic context has changed dramatically. A recession triggered by the 2008 financial crisis led to the adoption of stimulus packages to kick-start the economy. While slowly recovering from the downturn, Europe is now faced with a public debt crisis and fears of a new recession. Public authorities across Europe need to act decisively to cope with this changed context. The key challenge is to stabilise the financial and economic system in the short term while also taking measures to create the economic opportunities of tomorrow.

Fiscal consolidation and structural reform are necessary but not sufficient to secure Europe's global competitiveness. Smart investment, notably in research and innovation, is vital in order to maintain high standards of living while dealing with pressing societal challenges such as climate change, an ageing population, or the move towards a more resource-efficient society.

Research and innovation help deliver jobs, prosperity, quality of life and global public goods. They generate the scientific and technological breakthroughs needed to tackle the urgent challeng-

es society faces. Investment in this area also leads to businesses opportunities by creating innovative products and services. Although the Union is a global leader in many technologies, it faces increasing competition from traditional competitors and emerging economies alike and must therefore improve its innovation performance.

Research and innovation have therefore been placed at the centre of the Europe 2020 strategy² to promote smart, sustainable and inclusive growth. This includes the headline objective of increasing spending on R&D to 3% of GDP by 2020. The Innovation Union³ flagship initiative provides a comprehensive set of actions for stepping up research and innovation performance. Within this policy context, the Commission's proposals for the post-2013 Union Budget⁴ reflect its ambition to invest in Europe's future, ensuring that every euro provides maximum benefit to European citizens.

Horizon 2020: a break from the past

The name of the Union's new funding programme for research and innovation – Horizon 2020 – reflects the ambition to deliver ideas, growth and jobs for the future. Horizon 2020 will be a key tool in implementing the Innovation Union flagship initiative, in delivering on the commitments made therein and in responding to the conclusions of the 4 February 2011 European Council and to the European Parliament's Resolution of 12 May 2011 on the Innovation Union⁵.

Horizon 2020 brings together all existing Union research and innovation funding, including the Framework Programme for Research, the innovation related activities of the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology (EIT)⁶. This approach is

² COM(2010) 2020

³ COM(2010) 546

⁴ COM(2011) 500

⁵ P7 TA(2011)0236

⁶ Activities in the field of nuclear energy are an integral part of Horizon 2020, yet they are subject to a separate proposal under the Euratom Treaty. Funding for ITER will be outside the EU Budget and subject to a supplementary programme.

widely recognised by stakeholders as the way forward⁷ and has also been supported by the European Parliament in its Resolution of 27 September 2011⁸, the European Economic and Social Committee⁹ and the European Research Area Committee¹⁰.

The set of proposals for Horizon 2020 consists of:

- a proposal for Horizon 2020¹¹, laying down the general objectives, rationale and Union added value, the financial envelope and provisions on control, monitoring and evaluation;
- a proposal for a single specific programme to implement Horizon 2020¹², laying down the implementation modalities and the content in terms of the broad lines of activities;
- a proposal for a single set of Rules for Participation and Dissemination¹³, laying down the modes of funding and reimbursement of costs, conditions for participation, selection and award criteria and the rules on ownership, exploitation and dissemination of results; and
- a separate proposal for the part of Horizon 2020 corresponding to the Euratom Treaty¹⁴.

⁷ http://ec.europa.eu/research/horizon2020/pdf/consultation-conference/summary_analysis.pdf

⁸ P7 TA(2011)0401

⁹ CESE 1163/2011

¹⁰ ERAC 1210/11

¹¹ Proposal for a Regulation of the European Parliament and of the Council on Horizon 2020 – The Framework Programme for Research and innovation (2014-2020), COM(2011) 809

¹² Proposal for a Council Decision establishing the Specific Programme implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020), COM(2011) 811

¹³ Proposal for a Regulation of the European Parliament and of the Council laying down the rules for the participation and dissemination in ‘Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020)’, COM(2011) 810

¹⁴ Proposal for a Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing Horizon 2020 – The Framework Programme for Research and Innovation, COM(2011) 812

These proposals are accompanied by the necessary ex-ante impact assessments¹⁵. Complementary to this package, there is also a separate proposal for a revision of the EIT Regulation.

Key novelties:

Horizon 2020 has a number of new features that make it fit for purpose to promote growth and tackle societal challenges. These include:

Major simplification through a simpler programme architecture, a single set of rules, less red tape through an easy to use cost reimbursement model, a single point of access for participants, less paperwork in preparing proposals, fewer controls and audits, with the overall aim to reduce the average time to grant by 100 days;

An inclusive approach open to new participants, including those with ideas outside of the mainstream, ensuring that excellent researchers and innovators from across Europe and beyond can and do participate;

The integration of research and innovation by providing seamless and coherent funding from idea to market;

More support for innovation and activities close to the market, leading to a direct economic stimulus;

A strong focus on creating business opportunities out of our response to the major concerns common to people in Europe and beyond, i.e. ‘societal challenges’;

More possibilities for new entrants and young, promising scientists to put forward their ideas and obtain funding.

Focusing resources on key priorities

Horizon 2020 will focus resources on three distinct, yet mutually reinforcing, priorities, where there is clear Union added value. These priorities correspond to those of Europe 2020 and the Innovation Union.

Excellent Science. This will raise the level of excellence in Europe’s science base and ensure a steady stream of world-class research to secure Europe’s long-term competitiveness. It will support the best ideas, develop talent within Europe, provide

¹⁵ SEC(2011) 1427 and SEC(2011) 1428

researchers with access to priority research infrastructure, and make Europe an attractive location for the world's best researchers.

This will:

support the most talented and creative individuals and their teams to carry out frontier research of the highest quality by building on the success of the *European Research Council*;

fund collaborative research to open up new and promising fields of research and innovation through support for *Future and Emerging Technologies* (FET);

provide researchers with excellent training and career development opportunities through the *Marie Skłodowska-Curie actions*¹⁶ (*Marie Curie actions*);

ensure Europe has world-class *research infrastructures* (including e-infrastructures) accessible to all researchers in Europe and beyond.

Industrial Leadership. This will aim at making Europe a more attractive location to invest in research and innovation (including eco-innovation), by promoting activities where businesses set the agenda. It will provide major investment in key industrial technologies, maximise the growth potential of European companies by providing them with adequate levels of finance and help innovative SMEs to grow into world-leading companies.

This will:

build *leadership in enabling and industrial technologies*, with dedicated support for ICT, nanotechnologies, advanced materials, biotechnology, advanced manufacturing and processing, and space, while also providing support for cross-cutting actions to capture the accumulated benefits from combining several Key Enabling Technologies;

facilitate *access to risk finance*;

provide Union wide support for *innovation in SMEs*.

¹⁶ Through this name, the Commission pays tribute to this outstanding Nobel prize winning scientist and the remarkable contribution she made to the advancement of the state of science in Europe.

Societal Challenges. This reflects the policy priorities of the Europe 2020 strategy and addresses major concerns shared by citizens in Europe and elsewhere. A challenge-based approach will bring together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities. This will cover activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake. It will include establishing links with the activities of the European Innovation Partnerships.

Funding will be focussed on the following challenges:

- *Health, demographic change and wellbeing;*
- *Food security, sustainable agriculture, marine and maritime research and the bio-economy;*
- *Secure, clean and efficient energy;*
- *Smart, green and integrated transport;*
- *Climate action, resource efficiency and raw materials;*
- *Inclusive, innovative and secure societies.*

Sustainable development will be an overarching objective of Horizon 2020. The dedicated funding for climate action and resource efficiency will be complemented through the other specific objectives of Horizon 2020 with the result that at least 60 % of the total Horizon 2020 budget will be related to sustainable development, the vast majority of this expenditure contributing to mutually reinforcing climate and environmental objectives. It is expected that around 35% of the Horizon 2020 budget will be climate related expenditure.

The EIT will play an important role by combining excellent research, education and innovation, thus integrating the knowledge triangle. The EIT will do so primarily through the Knowledge and Innovation Communities (KICs). In addition, it will ensure that experiences are shared beyond the KICs through targeted dissemination and knowledge sharing measures.

The Joint Research Centre's activities will be an integral part of Horizon 2020, providing robust, evidence-based support to Union policies. This will be driven by customer needs complemented by forward-looking activities.

Nuclear energy research and innovation, to be supported under the Euratom Treaty, will allow the Union to develop, in the interest of all its Member States, the most advanced technologies for nuclear safety, security, radiation protection and non-proliferation.

The way in which the Horizon 2020 budget is distributed over its strategic objectives equally reflects how it has been adapted to operate in a changed context. The budget distribution within Horizon 2020:

- is fully aligned with Europe 2020 by implementing Innovation Union, prioritising the Digital Agenda, inclusiveness, energy, resource efficiency, industrial technologies, climate action and contributing to the Union's external policies;
- prioritises spending with immediate impact on growth and jobs through major investment in risk finance, SMEs and large scale pilots and demonstrators for key technologies;
- continues to invest in Europe's future by providing a major boost to the European Research Council, strengthening research on Future and Emerging Technologies (FET), increasing the possibilities for training, mobility and career development for young talents and giving an important role to the EIT;
- leverages other public and private sources of funding to maximise its effect on progressing towards the 3% target.

Horizon 2020 will be a seven-year programme and there may be significant shifts in the broader economic and policy context as the programme progresses. Ensuring Horizon 2020's continued relevance will therefore also require to adjust priorities and resources, as and when necessary. As such, flexibility clauses have been included in the proposal in this respect.

The implementation of Horizon 2020 will also take a strategic approach to programming of research and innovation, using joint actions and modes of governance aligning closely with policy development yet cutting across the boundaries of traditional sectoral policies. This will be based on sound evidence, analysis and foresight, with progress measured against a robust set of indicators.

As regards the funding of research activities involving human embryonic stem cells, the Horizon 2020 legislative package is fully in line with the approach supported by the European Par-

liament and the Council upon their adoption of the FP7 legislation, as set out in the Commission's statement of 2006¹⁷.

Simplifying access and optimising management

Horizon 2020 must attract the most excellent researchers and innovative enterprises. This requires further simplification of rules and procedures for participants. The FP7 interim evaluation report concluded that major steps towards further simplification were needed, through an approach based on an adequate balance between risk taking and trust in participants¹⁸.

Horizon 2020 will build on the impetus given by the Communication on simplification¹⁹ and the Commission Decision on three measures for simplifying the implementation of FP7²⁰ by introducing important new features, as also called for by the European Parliament in its Resolution of 11 November 2010²¹.

Simplification in Horizon 2020 will target three overarching goals: to reduce the administrative costs of the participants; to accelerate all processes of proposal and grant management and to decrease the financial error rate.

Simplification will be achieved along several dimensions:

Structural simplification is provided through:

- a simpler programme architecture centred on three strategic objectives, making it easier for participants to identify where funding opportunities exist;
- a single set of participation rules, on issues such as eligibility, evaluation or IPR, applying to all components of Horizon 2020, with deviations only possible when justified by specific needs.

Simpler funding rules that take into account stakeholders' preference for a reimbursement of actual costs, will include:

¹⁷ OJ L412 of 30 December 2006

¹⁸ http://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/fp7_interim_evaluation_expert_group_report.pdf

¹⁹ COM(2010)0187

²⁰ C(2011) 174 of 24 January 2011

²¹ P7 TA(2011)0401

a simpler reimbursement of direct costs, with a broader acceptance of beneficiaries' usual accounting practices;
the possibility of using unit personnel costs (average personnel costs), including for SME owners without a salary;
simplification of time-recording by providing a clear and simple set of minimum conditions; in particular abolition of time-recording obligations for staff working exclusively on a Horizon 2020 project;
indirect costs covered by a single flat-rate applied to the direct costs as a general rule – removing a major source of financial errors and complexity;
one single reimbursement rate for all participants and activities in the same project;
lump sums, prizes, output based funding for specific areas where this has proved appropriate.

A revised control strategy will achieve a new balance between trust and control and between risk taking and risk avoidance through:

- an extension of the guarantee fund to all actions in Horizon 2020 and ex-ante financial capacity checks required only for coordinators;
- a reduction of the number of certificates on financial statements by requiring only one such certificate per beneficiary at the end of the project;
- a reduction of the audit burden on participants through an ex-post control strategy with emphasis on risk-based control and fraud detection, a single-audit concept and a reduction of the limitation period for ex-post audits from five to four years;

This revised approach should translate into a maximum of 7% of Horizon 2020 beneficiaries being subject to audit over the whole programming period.

In parallel, the Commission will continue to streamline, harmonise and accelerate procedures and processes linked to programme and project implementation. This will include a renewed approach to comitology, with a strong focus on involvement of programme committees in discussions on strategic planning and on ensuring links to nationally funded activities. Moreover the

Commission will build on progress made in increasing the quality, efficiency and consistency of implementation via a single user-friendly IT platform providing a one-stop shop for participants (e-Horizon 2020) and through further steps towards externalising the Union's research and innovation funding. In this respect, the use of the existing executive agencies will be optimised, including through a possible redistribution of tasks to achieve greater specialisation.

Through all of these elements, the Commission deems it possible to reduce the average time to grant by 100 days for Horizon 2020 as compared to the current situation.

Partnership approaches on the basis of Articles 185 and 187 of the Treaty will also be continued. A more extensive use of financial instruments will also be an important part of the externalisation effort, building on the debt and equity platforms currently being set up. The EIT will, through a careful planning of its activities, align its work closely to the priorities of Horizon 2020. By expanding the number of KICs and taking up activities relating to dissemination and knowledge sharing, it will be able to manage a larger budget than it does today.

A broad and seamless approach to innovation

The Innovation Union flagship initiative highlights the need for Europe to develop a distinctive approach to innovation built on its unique set of values. Horizon 2020 takes a broad approach to innovation that is not limited to bringing new products to the market, but also covers processes, systems or other approaches, including by recognising European strengths in design, creativity, services and the importance of social innovation. Funding for these activities will be meshed with the support for research and technological development.

Stronger support will be given to the market take-up of innovation, including by the public sector. This will include more proof-of-concept, piloting and demonstration. It will involve a better use of the potential of research infrastructures, as well as setting technical standards, pre-commercial procurement and strengthened loan and equity financing. New approaches such as inducement prizes, that reward the achievement of specific goals,

will encourage the involvement of a wider range of innovators. The European Innovation Partnerships will be tasked with tackling technical, legal and operational barriers to innovation in Europe, hereby establishing solid links between supply and demand side measures.

Major innovations often come from unforeseen breakthroughs or the new application of existing or emerging technologies. Horizon 2020 will allow Europe's brightest and most creative minds to extend the frontiers of knowledge by strengthening bottom-up activities such as the ERC and FET, the Marie Curie actions and the dedicated SME instrument. Furthermore, for each of the societal challenges, topic descriptions in calls for proposals will, more than in the past, allow plenty of scope for applicants to propose innovative solutions of their own choice.

Horizon 2020 will promote exchange of ideas and perspectives by deploying a seamless approach across all of its constituent parts. The same rules will apply, allowing participants to move swiftly between different parts. Bridging actions will be put in place to bring projects and results from one part into contact with related projects in other parts.

Joint activities between the different parts of Horizon 2020 will be needed in particular to ensure a seamless connection between support for the enabling and industrial technologies and their applications to societal challenges. Specific provisions have been made to enable this approach and to incentivise cross-cutting actions, including the ability to combine budgets in an efficient manner.

Following on from recommendations made by the High Level Group on Key Enabling Technologies (KETs)²², 'Leadership in enabling and industrial technologies' will allow treating KET's as a key priority of Horizon 2020, highlighting their importance for growth and jobs. This includes a dedicated budget of EUR 6663 million for the KETs of photonics, micro- and nanoelectronics, nanotechnologies, advanced materials, biotechnology and advanced manufacturing and processing. As part of this integrated ap-

²² http://ec.europa.eu/enterprise/sectors/ict/files/kets/hlg_report_final_en.pdf

proach to KETs, dedicated support will be provided for activities exploiting the accumulated benefits from combining a number of KETs, in particular through support for larger-scale pilot line and demonstrator projects.

Strengthening the participation of SMEs

The Innovation Union flagship initiative includes a commitment to ensure strong participation by SMEs in Horizon 2020. SMEs have significant innovation potential and they have the agility to bring revolutionary technological breakthroughs and service innovation to the market. Strengthening the approach to SMEs, including enhancing the participation of micro-enterprises, is vital if Horizon 2020 is to help the fast-growing companies of today to become the multinationals of tomorrow.

Horizon 2020 takes an integrated approach to SMEs. Through this approach, it is expected that around 15% of the total combined budget for all societal challenges and the enabling and industrial technologies will go to SMEs. A number of novelties under Horizon 2020 will encourage the participation of SMEs.

Simplification will be of particular benefit to SMEs, as they often lack the resources to cope with high administrative burdens. This will include setting up a single entry point for SMEs wishing to participate in Horizon 2020. Equally, the strengthened emphasis on innovation activities will increase SME participation as these activities are of direct relevance to them.

These horizontal measures will be supplemented with SME-specific actions, consolidating support that was previously dispersed over several programmes into a streamlined set of instruments.

First, a new SME instrument, building on the SBIR²³ model, the principles of which are described in 'Innovation in SMEs', will be used consistently across all societal challenges as well as for the enabling and industrial technologies. The instrument will allow SMEs to put forward their most innovative ideas for addressing Union-level challenges. The instrument will meet the needs of all SMEs providing innovative solutions to specific challenges,

²³ Small Business Innovation Research, <http://www.sbir.gov>

irrespective of whether these are high-tech and research-driven or social and service-driven innovations, through the following features:

Only SMEs will be allowed to apply for funding. They can bring with them other partners but one of the major novelties of this instrument is that it allows for single participant projects;

Support will be provided in different phases. A feasibility phase will allow an assessment of project potential. A main grant will allow the SME to undertake the project, maintain ownership of IPR and outsource tasks where needed. Follow-up support will be provided indirectly through services such as help in accessing venture capital, innovation support or public procurement.

Second, a dedicated activity for research-intensive SMEs is included in 'Innovation in SMEs'. This will support the next stage in the Eurostars²⁴ scheme implemented in partnership with Member States²⁵. It will be accompanied by measures to build SME innovation capacity, such as networking and brokering, and also allow SMEs to 'spin in' technology by connecting to researchers and innovators across Europe.

Third, 'Access to risk finance' will have a strong SME focus, as called for by the European Council. For the Debt facility, the SME focus will be strengthened by working with financial intermediaries at national and regional levels. The Equity facility will focus on early-stage investments, while having the possibility to make expansion and growth-stage investments in conjunction with the equity facility under the Programme for the Competitiveness of Enterprises and SMEs.

The Equity facility and the SME-related component of the Debt facility will be implemented as part of two EU Financial Instruments that provide equity and debt to support SMEs' R&I and growth, in conjunction with the equity and debt facilities under the Programme for the Competitiveness of Enterprises and SMEs.

²⁴ <http://www.eurostars-eureka.eu/>

²⁵ <http://www.eurekanetwork.org/>

International cooperation

International cooperation with third countries is necessary to address effectively many specific objectives defined in Horizon 2020. This is the case in particular for all the societal challenges addressed by Horizon 2020, which need to be tackled at the global level. International cooperation is also essential for frontier and basic research in order to capture the benefits from emerging science and technology opportunities. Promoting the international mobility of researchers and innovation staff is crucial for enhancing this global cooperation. Activities at the international level are equally important to enhance the competitiveness of European industry by promoting the take-up and trade of novel technologies, for instance through the development of worldwide standards and guidelines, and by promoting the acceptance and deployment of European solutions outside Europe.

The aim of international cooperation in Horizon 2020 will be to strengthen the Union's excellence and attractiveness in research, to tackle global challenges jointly and to support the Union's external policies. The focus of international cooperation in Horizon 2020 will be on cooperation with three major country groupings:

- (1) industrialised and emerging economies;
- (2) enlargement and neighbourhood countries; and
- (3) developing countries.

Where appropriate, Horizon 2020 will promote cooperation at regional or multilateral level. International cooperation in research and innovation is a key aspect of the Union's global commitments and has an important role to play in the Union's partnership with developing countries, which are often disproportionately affected by global challenges. This cooperation will promote inclusive growth and progressing towards the achievement of the Millennium Development Goals and other goals agreed in the framework of international sustainable development.

Horizon 2020 will continue with the principle of general openness, while encouraging reciprocal access to third country programmes. In addition, a range of targeted actions will be implemented taking a strategic approach to international cooperation on the basis of common interest and mutual benefit and pro-

moting coordination and synergies with Member States activities. Dedicated support measures to assist the strategic approach and the process of priority setting are included in the 'Inclusive, innovative and secure societies' challenge.

Spreading excellence and widening participation

Horizon 2020 will continue to allocate funding on the basis of competitive calls for proposals and through independent and merit-based peer review, selecting only the best projects without any consideration of geographical distribution.

Such an approach does, however, need to be complemented with measures to ensure that Horizon 2020 is open to a wide range of participants, including new entrants, and that excellence prevails wherever it exists. Talent therefore needs to be nurtured and supported to grow into excellence, enabling researchers and innovators across Europe to benefit from Horizon 2020's instruments, networks and funding. This will include forging close links with activities in the higher education sector, notably the Erasmus For All programmes and the Knowledge Alliances.

Union funding has assisted in building up and spreading excellence across Europe both through FP7 and the Cohesion policy funds. The 'Regions of Knowledge' and 'Research Potential' activities of the FP7 Capacities specific programme have been met with great interest, but evidence suggests that it would be more efficient if similar actions were pursued under Cohesion policy²⁶.

Therefore the Commission proposes a clearer division of labour between Horizon 2020 and the Structural Funds, while strengthening interactions. Support for regions in building up their research and innovation capacity will be provided through Cohesion policy, which will take forward the concept of smart specialisation and include measures to allow researchers and innovators across Europe to grow into excellence.

Complementary measures under Horizon 2020 will aim at widening participation across the whole of the programme. This will include ensuring better coordination, cooperation and infor-

²⁶ Expert Group on synergies between FP7, CIP and the Cohesion Policy Funds, ftp://ftp.cordis.europa.eu/pub/fp7/docs/seg-final_en.pdf

mation exchange between the two Union funding programmes. Support will also be given in 'Inclusive, innovative and secure societies' to policy learning and advice with the aim to reform research and innovation policies. This will also involve networking and twinning schemes enhancing the connections between researchers and innovators in all Member States and regions. In this way, the drive for excellence that is a hallmark of Horizon 2020 combined with the capacity-building elements of the Structural Funds will allow pockets of excellence to emerge and grow in developing regions. These will raise the international attractiveness of the regions concerned and act as focal points for their further economic development. In this respect, the specific circumstances of the Outermost Regions should also be taken into account.

Completing the European Research Area

Completion of the European Research Area (ERA) is urgently needed to avoid costly overlaps and unnecessary duplication of activities. It entails building a genuine single market for knowledge, research and innovation, enabling researchers, research institutions and businesses to circulate, compete and co-operate across borders. Remaining gaps will be addressed through the ERA framework, to be presented by the Commission in 2012.

Horizon 2020 will strengthen the support given to promoting researchers' careers and mobility (including through the Marie Curie actions) and to ensuring the networking and opening up of large-scale research infrastructures as well as achieving an 'online' ERA ('Research Infrastructures'). In order to contribute to the attractiveness of the research career, Horizon 2020 will pay adequate attention to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the ERA, while respecting their voluntary nature. Further steps will be taken towards Open Access, to ensure that research results are available to those who need them. It will also involve actions to remove barriers preventing women from pursuing successful scientific careers. The Commission is committed to reaching the target of 40% female participation in its advisory structures and it will ensure that gender differences are reflected in the content

of calls for proposals, and in evaluation processes, where appropriate. Increased female participation will improve the quality of research and innovation while helping to address the existing deficit of highly qualified and experienced scientists necessary for enhanced European competitiveness and economic growth.

The 'Inclusive, innovative and secure societies' challenge will support policy coordination across Europe, providing a strong evidence base to help Member States in implementing adequate policy mixes. As a novel measure, the work programmes will contain information on how coordination with national research and innovation funding is ensured, making it an element of discussion in the programme committees.

Horizon 2020 will support approaches aimed at pooling and leveraging other sources of funding through a simplified ERA-NET scheme, providing support from coordination of national programmes up to the co-funding of joint calls for proposals. A clear set of criteria for joint programmes under Article 185 and joint undertakings under Article 187 will enable a stronger set of initiatives to go forward, taking account of the experience and evaluations under FP7 as well as the revisions to the Financial Regulations.

Joint Programming Initiatives (JPI) have been an important development in pooling resources to generate critical mass in addressing challenges shared by Member States. Horizon 2020 will aid JPIs in the development of their Strategic Research Agendas. Where the challenge addressed by a JPI is in line with the priorities of Horizon 2020, ERA-NET or co-funding may be used to provide further support. New Article 185 initiatives will only be considered provided there is a clear commitment from the Member States and when a JPI has demonstrated its capacity for significant collaboration and the scale and scope needed to support full integration of national programmes.

Building on the experience of the public private partnerships under the European economic recovery plan, there will be greater scope for establishing such partnerships without recourse to new legislative procedures. This will allow such initiatives to be implemented in a streamlined manner while ensuring greater clarity of roles and responsibilities.

Meeting our shared ambitions

Europe's taxpayers have a right to know how their money is invested. Because research and innovation are vital to people's futures, it is important to bring the research and innovation activities funded through Horizon 2020 to the attention of the general public, showing in particular the added value of Union level action. This will generate better public understanding, engagement and debate. Information and communication measures will therefore be an integral part of Horizon 2020 implementation.

These measures will also focus on communicating the outcomes of research to policy makers, companies, innovators and other researchers, including by promoting Open Access.

Meeting our shared ambitions, which are central to Europe 2020 and the Innovation Union, requires ambitious policies. The Commission is convinced that its proposal for Horizon 2020 and the radical overhaul it entails will enable the Union Budget to play a key role in driving the step change in research and innovation performance that Europe needs. Horizon 2020 is designed to last until the end of this decade. Its projects will continue well into the next decade and the impact of its funding should be felt beyond that. It is therefore truly an investment for the future.



**COMMUNICATION FROM THE COMMISSION
TO THE EUROPEAN PARLIAMENT, THE COUNCIL,
THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND
THE COMMITTEE OF THE REGIONS**

***A resource-efficient Europe – Flagship initiative
under the Europe 2020 Strategy [3]***

**1. INTRODUCTION: WHY IS RESOURCE EFFICIENCY
IMPORTANT?**

Natural resources underpin the functioning of the European and global economy and our quality of life. These resources include raw materials such as fuels, minerals and metals but also food, soil, water, air, biomass and ecosystems. The pressures on resources are increasing. If current trends continue, by 2050, the global population is expected to have grown by 30% to around 9 billion and people in developing and emerging economies will legitimately aspire to the welfare and consumption levels of developed countries. As we have seen in recent decades, intensive use of the world's resources puts pressure on our planet and threatens the security of supply. Continuing our current patterns of resource use is not an option.

In response to these changes, increasing resource efficiency will be key to securing growth and jobs for Europe. It will bring major economic opportunities, improve productivity, drive down costs and boost competitiveness. It is necessary to develop new products and services and find new ways to reduce inputs, minimise waste, improve management of resource stocks, change consumption patterns, optimise production processes, management and business methods, and improve logistics. This will help stimulate technological innovation, boost employment in the fast de-

veloping 'green technology' sector, sustain EU trade, including by opening up new export markets, and benefit consumers through more sustainable products.

Using resources more efficiently will help us achieve many of the EU's objectives. It will be key in making progress to deal with climate change and to achieve our target of reducing EU greenhouse gas emissions by 80 to 95% by 2050. It is needed to protect valuable ecological assets, the services they provide and the quality of life for present and future generations. It will help us ensure that the agricultural and fisheries sectors are strong and sustainable and reduce food insecurity in developing countries. By reducing reliance on increasingly scarce fuels and materials, boosting resource efficiency can also improve the security of Europe's supply of raw materials and make the EU's economy more resilient to future increases in global energy and commodity prices.

A vision of where Europe should be in 2050 and a long-term policy framework can provide a clear path for businesses and investors. It is important to sharpen the focus on the action that has to be taken in the next ten years to put Europe on the right track and to speed up the transition.

2. THE EUROPE 2020 STRATEGY AND THE FLAGSHIP INITIATIVE A RESOURCE-EFFICIENT EUROPE

To enjoy the benefits of a resource-efficient and low-carbon economy, we need to fulfil three conditions:

- *First*, we need to take coordinated action in a wide range of policy areas and this action needs political visibility and support.
- *Second*, we have to act urgently due to long investment lead-times. While some actions will have a positive impact on growth and jobs in the short-term, others require an upfront investment and have long pay-back times, but will bring real economic benefits for the EU economy for decades to come.
- *Third*, we have to empower consumers to move to resource-efficient consumption, to drive continuous innovation and ensure that efficiency gains are not lost.

A resource-efficient Europe is one of seven flagship initiatives as part of the Europe 2020 strategy aiming to deliver smart, sustainable and inclusive growth¹. This is now Europe's main strategy for generating growth and jobs, backed by the European Parliament and the European Council². Member States and the EU institutions are working together to coordinate actions to deliver the necessary structural reforms.

This flagship initiative aims to create a framework for policies to support the shift towards a resource-efficient and low-carbon economy which will help us to:

- boost economic performance while reducing resource use;
- identify and create new opportunities for economic growth and greater innovation and boost the EU's competitiveness;
- ensure security of supply of essential resources;
- fight against climate change and limit the environmental impacts of resource use.

To achieve a resource-efficient Europe, we need to make technological improvements, a significant transition in energy, industrial, agricultural and transport systems, and changes in behaviour as producers and consumers. To give businesses the certainty which they need to invest now, and to ensure that future generations benefit from smart investment, we have to start taking action immediately, on the basis of a regulatory framework that provides long-term stability. Improving resource efficiency also provides an opportunity to keep costs under control by reducing material and energy consumption and thus to boost future competitiveness.

The EU has already shown that progress on resource efficiency is possible. Recycling has started to become a normal practice for businesses and households across the EU. Since 1990, we have reduced greenhouse gas emissions in the EU by more than 10% while our economies have grown by about 40%. We are reducing our reliance on fossil fuels by increasing energy efficiency and developing alternatives. However, we now need to accelerate progress, extend efforts to other areas and reap the benefits that a successful strategy can bring for competitiveness, job creation and prosperity.

This flagship initiative will help build a strategic and integrated approach which will ensure that concrete actions already decided for 2020 pave the way towards longer-term goals for 2050 and that appropriate further action is taken to achieve our objectives. It will ensure that we optimise the synergies inherent in such a broad-based strategy, and that we identify and tackle the trade-offs as part of well-informed policy making. It requires a coherent analysis of the reasons why some resources are not used efficiently. From this starting point, it will be possible to make the case for mainstreaming resource efficiency into a wide range of policies, and to develop a set of tools to allow policy makers to drive forward and monitor progress. This will help build the clear support and involvement of national, regional and local authorities, stakeholders and citizens.

3. EXPLOITING SYNERGIES AND ADDRESSING TRADE-OFFS

The complex and interlocking approach needed to build a resource-efficient Europe can only be achieved with a policy mix that optimises synergies and addresses trade-offs between different areas and policies.

The following are typical examples of synergies:

- jobs created in sectors linked to sustainable growth are often more secure, with high potential for exports and economic value creation;
- action on climate change and energy efficiency can increase energy security and reduce vulnerability to oil shocks;
- low-carbon technologies reduce emissions and often bring benefits in terms of air quality, noise and public health;
- taxes and subsidies on the use of energy or other resources can be used both to steer behaviour leading to reduced and more efficient consumption and to help restructure public finances away from labour taxation, which benefits job creation and economic growth;
- increasing recycling rates will reduce the pressure on demand for primary raw materials, help to reuse valuable

materials which would otherwise be wasted, and reduce energy consumption and greenhouse gas emissions from extraction and processing;

- improving the design of products can both decrease the demand for energy and raw materials and make those products more durable and easier to recycle. It also acts as a stimulus to innovation, creating business opportunities and new jobs;
- improving energy efficiency reduces the need to generate energy in the first place and the need for infrastructures. This, in turn, eases pressure on land resources. For example, decreasing EU energy consumption by 1% would mean that we would not need the equivalent of 50 coal power plants or 25 000 wind turbines.

Resource-efficiency policies need to address appropriately trade-offs. In order to make the right choices both now and for the longer term, we need to consider the whole life-cycle of the way we use resources, including the value chain, and the trade-offs between different priorities. Having the information needed to weigh different choices will help policy makers decide where to focus efforts. These are some examples:

- action to reduce unilaterally greenhouse gas emissions domestically may have an impact on the competitiveness of energy-intensive industry and lead to production and the associated greenhouse gas emissions and employment being shifted abroad if corrective measures are not maintained;
- just-in-time production processes reduce the energy needed to store products in warehouses but may also require more transport. This may also be true for the collection of waste and recycling;
- deployment of 'green' vehicles reduces the use of fossil fuels but increases the demand for electricity and certain raw materials, some of which are subject to supply restrictions and concentrated in a few geographical areas (e.g. rare earth elements for electronic components and fuel cells, lithium for batteries);
- land used to produce food may compete with land use for energy and both may compete with land which supports

biodiversity or provides ecosystem services such as absorbing carbon from the atmosphere;

- materials to improve insulation can significantly reduce the amount of energy required to heat a building, but could be more energy-intensive to produce;
- expanding nuclear power can reduce carbon emissions but requires further enhancing of nuclear safety, waste management and non-proliferation;
- desalination can provide a solution to water supply problems but it may increase fossil fuel consumption and greenhouse gas emissions.

4. COMPONENTS FOR DELIVERING THE RESOURCE-EFFICIENT EUROPE FLAGSHIP

INITIATIVE

A key aim of this flagship initiative is to increase certainty for investment and innovation by forging an agreement on the long-term vision and ensuring that all relevant policies factor in resource efficiency in a balanced manner. It provides a long-term framework for action in many policy areas, supporting policy agendas for climate change, energy, transport, industry, raw materials, agriculture, fisheries, biodiversity and regional development. These different components must be well coordinated.

The key components of the long-term framework will come in the form of a series of coordinated roadmaps to³:

- Outline what the EU needs to do to create a low-carbon economy in 2050, cutting greenhouse gas emissions by 80-95%, as part of global efforts to fight climate change, while improving energy security and promoting sustainable growth and jobs;
- Analyse how the EU can create an energy system by 2050 which is low-carbon, resource-efficient, secure and competitive. This should provide the necessary certainty for investors, researchers, policy makers and regulators;
- Present a vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050 that removes all obstacles to the internal market for transport,

promotes clean technologies and modernises transport networks;

- Define medium and long-term objectives and means for achieving them with the main aim to decouple economic growth from resource use and its environmental impact.

Medium-term measures should be consistent with this long-term framework. A number of such measures have already been identified. These include:

- An energy efficiency plan with a time horizon of 2020 which will identify measures to achieve energy savings of 20% across all sectors, and which will be followed by legislation to ensure energy efficiency and savings;
- Proposals to reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport in the context of the next EU budget to align these areas with the requirements of a resource-efficient, low-carbon economy;
- A new EU biodiversity strategy for 2020 to halt further loss to and restore biodiversity and ecosystem services in the light of pressures on ecosystems;
- Measures to tackle the challenges in commodity markets and on raw materials⁴ which will, amongst others, periodically assess critical raw materials and define a trade policy to ensure sustainable supplies of raw materials from global markets. These measures will help ensure coherence between the EU's raw materials and external policies, including the promotion of good governance, transparency of activities and creation of local valued added in developing countries. It will promote extraction, recycling, research, innovation and substitution inside the EU;
- A strategy to make the EU a 'circular economy', based on a recycling society with the aim of reducing waste generation and using waste as a resource;
- Early action on adaptation to climate change to minimise threats to ecosystems and human health, support economic development and help adjust our infrastructures to cope with unavoidable climate change;

- A water policy that makes water saving measures and increasing water efficiency a priority, in order to ensure that water is available in sufficient quantities, is of appropriate quality, is used sustainably and with minimum resource input, and is ultimately returned to the environment with acceptable quality.

Concrete examples of EU action already under way

As recognised in the Europe 2020 Innovation Union flagship initiative, stricter environmental targets and standards which establish challenging objectives and ensure long-term predictability, provide a major boost for eco-innovation. The Kyoto Protocol is an example of this. Analysis by the European Patent Office and UNEP has shown that patenting rates in clean energy technologies significantly outpaced those related to fossil technologies after adoption of the Protocol in 1997⁷. At EU level, the Climate and Energy package has gone a step further: reducing greenhouse gas emissions by getting the prices right, targets guiding further action, fostering new technologies and diversifying energy supply. The European Emission Trading system is an example of how market forces can be harnessed to give incentives for more efficient use of resources. Innovation and future growth

opportunities are fostered by the resulting carbon prices which internalise the costs of high-carbon resources.

In 2008, the EU revised the legal framework for waste based on the entire product life cycle from generation to disposal, with emphasis on waste prevention, reuse, recycling and recovery ('waste hierarchy'). Member States must prepare waste management plans covering the type, quantity, sources of waste and collection systems. Waste prevention plans must also be drawn up with a view to breaking the link between economic growth and waste generation. Improved waste management could cut significantly CO₂ emissions. For example, each year the EU disposes of 5.25 billion euro worth of recyclables such as paper, glass, plastics, aluminium and steel. If this was recycled, the equivalent of 148 million tonnes of CO₂ emissions could be avoided annually. Improved management of municipal waste could result in 92 million tons of greenhouse gas emissions avoided in 2020 compared with 1995. At least 500 000 new jobs would be created in Europe if countries recycled 70% of their waste.

In the field of energy efficiency, the first nine measures under the Ecodesign Directive are expected to reduce power consumption by some 340 TWh by 2020, i.e. the equivalent of the output of 77 typical power stations. The recast Directive on energy performance of buildings which entered into force in July 2010 is expected to lead to a reduction of EU final energy consumption by 2020 in the order of 5%. Other EU policies, notably access to financing for energy efficiency under the Cohesion and Structural Funds, are also having positive results. France, for instance, will use available EU funds to more than halve energy consumption per square meter of its building stock.

Further information on actions to be taken at EU level and at Member State level is included in the description of the resource-efficient Europe flagship initiative in the Communication from the Commission on the Europe 2020 strategy⁵. The following

box contains specific examples of EU action already under way. More examples of resource efficiency measures taken by Member States and international partners as well as a number of actions taken by business in a range of sectors to improve resource efficiency are provided on the Commission's website⁶.

Resources are often used inefficiently because the information about the true costs to society of consuming them is not available with the result that businesses and individuals cannot adapt their behaviour accordingly. Policy measures to improve resource efficiency and overall economic competitiveness must place greater emphasis on 'getting prices right' and making them transparent to consumers, for instance in transport, energy and water usage, so that prices reflect the full costs of resource use to society (e.g. in terms of environment and health) and do not create perverse incentives. In this respect, information and communication technologies can play a decisive role through, for instance, smart metering.

In addition, EU-wide, coordinated public support for R&D and innovation will be important to increase the availability and performance of the necessary technologies. As with all new technologies, there is a need to analyse up-front how to ensure the proper management of any potential negative impacts.

Policies to increase resource efficiency whilst supporting the competitiveness of EU industries should be well balanced and address both the demand side, e.g. via green public procurement and better information to consumers, and the supply side together. Moreover, resource efficiency will often be one of the core elements of sectoral strategies, but not the only one. In each policy area and for each policy instrument, appropriate analysis must be carried out using evaluation and impact assessment processes. The respective costs and benefits of action need to be analysed in depth to determine the most appropriate policies on a case-by-case basis.

5. BUILDING UP THE KNOWLEDGE BASE AND A CONSISTENT ANALYTICAL APPROACH

The analysis of initiatives under this flagship initiative must be based, where possible, on common assumptions, parameters and baselines, as well as on shared medium- and long-term visions. This will help ensure that the analyses provide a consist-

ent basis for policy decisions to achieve greenhouse gas emission reductions and other relevant targets in a cost-efficient manner across the relevant sectors.

As a first step, in early 2011, the Commission will present joint modelling scenarios up to 2050 on climate, energy and transport policies. Annex 2 sets out common assumptions and parameters for the reference scenario and a range of possible variations which are being examined and may be relevant for specific resource efficiency issues. The preliminary modelling results suggest that an 80% domestic reduction in greenhouse gas emissions by 2050 compared to 1990 levels is possible using technologies such as carbon capture and storage, renewable energies, nuclear power and electrification, if appropriate carbon prices, well-functioning infrastructures and markets can be achieved and the necessary technologies can be widely deployed. Subject to the achievement of the needed policy, infrastructure, technology and market developments, these preliminary modelling results suggest that the power generation, residential and industry sectors should be able to reduce emissions by more than 80%, the transport sector by around 60% and the agricultural sector by around 40%.

The fact that resource efficiency requires action in such a broad range of areas means that modelling is particularly complex. Existing models focus on specific policy areas and sectors such as energy and transport. They cannot capture fully the impact of resource use on ecosystems, enterprises, the economy and society as a whole, or the interdependence of policy measures. The Commission will undertake further analytical work to estimate economy-wide impacts, and to improve its ability to model in other areas relevant to resource efficiency, such as agriculture, industry and environment.

Building up the knowledge base will also require further work to evaluate policies and collect life-cycle data to further develop policies and prepare impact assessments, drawing, amongst others, on the activities in various sectors under the Framework Programmes on Research. In this context, it will also be needed to develop more harmonised and transparent ways of measuring environmental impacts.

6. RESOURCE EFFICIENCY AS AN INCREASING GLOBAL CONCERN

Given the global dimension of key environmental issues such as climate change, biodiversity, land use, deforestation, external impacts of consumption and production patterns, competitiveness, security of supply and access, the EU needs to address resource efficiency issues internationally and to cooperate closely with key partners, including with candidate countries and those in our neighbourhood. There are good reasons for doing so:

First, there is growing international awareness of the strategic importance of avoiding risks to supply of resources such as rare earths, fishing grounds, land, energy, and water. Technological developments, such as lithium for electric car batteries, are often tied to key raw materials which are sourced from across the globe.

Second, concerted action at global level can help mitigate the rise in global demand. Resource efficiency should therefore be a key element of our external relations, notably with major resource consumers such as emerging economies. For example, one of the most important consequences of emerging economies' growing position as energy consumers is that they will increasingly determine how energy is used on a global scale. The same is true for other key commodities. This has consequences for global supply patterns, but also for the interests of European manufacturers, investors and consumers in the emerging economies.

Third, international cooperation can lead to exchanges of skills, technology and best practice. Partners are making major efforts to increase their resource efficiency. Examples are Japan's so-called '3Rs-concept' of 'reduce, reuse, recycle'; China's draft new 5-year plan and heavy investments in 'clean technologies'; and South Korea's championing of 'green growth'. The EU must further increase its work in these areas to bolster its competitive position and benefit from the opportunities this creates. There is much scope for international cooperation in these areas. For example, the European Commission is driving forward cooperation with China on resource efficiency in areas such as grids, power generation and the building sector through ministerial-level dialogues, concrete research programs and expert-level cooperation.

Through its external commercial relations, the EU should continue efforts to provide a level playing field for industry, to improve the conditions for sustainable supply of raw materials, and to promote the liberalisation of trade in environmental goods and services so as to ensure industry's international competitiveness. Better deployment of green technologies would secure environmental benefits and improve the efficiency of production processes and thus support the most efficient use of scarce natural resources globally.

The EU has a strong interest in deepening cooperation on resource efficiency with international partners. This would contribute to the EU's objective of sustainable development and high-impact poverty reduction strategies in resource-reliant developing countries. It would also help to reduce the fast growing demand for global resources by encouraging the shift to cleaner modes of energy generation and transmission. The Rio+20 international conference on sustainable development in 2012 will focus on the 'green economy' and environmental governance and will provide a good opportunity for the EU to address resource efficiency with global partners.

7. GOVERNANCE AND MONITORING PROGRESS

The EU needs tools to monitor and measure progress on resource efficiency. Some key benchmarks are already provided in the Europe 2020 headline targets of 20% greenhouse gas emission reduction (30% if the conditions are right), 20% renewable energy sources, and 20% improvement in energy efficiency. However, indicators are needed to cover issues such as the availability of natural resources, where they are located, how efficiently they are used, waste generation and recycling rates, impacts on the environment and biodiversity. The Commission is working to ensure that appropriate indicators are available for monitoring and analytical purposes on the basis, for example, of the sustainable development indicators.

Effective governance and monitoring of progress are essential to ensure that the EU achieves greater resource efficiency in its production and consumption. Actions under the resource-efficient Europe flagship have close links to other flagship initiatives under the Europe 2020 strategy, in particular those on industrial policy, the innovation union, the digital agenda and the agenda for new skills and jobs⁸ and related Member State actions.

The governance and monitoring will take place in the framework of the Europe 2020 strategy and will integrate the relevant elements of the EU Sustainable Development

Strategy in order to ensure overall coherence. They will be based on an analysis of EU policies and those of individual Member States in their National Reform Programmes as part of the Annual Growth Survey exercise⁹. This will be done as part of the European Semester for 2012.

8. CONCLUSION

Focusing on resource efficiency in policy making is both a necessity and an opportunity for the EU. This flagship initiative sets out a framework to help ensure that long-term strategies in areas such as energy, climate change, research and innovation, industry, transport, agriculture, fisheries and environment policy produce results on resource efficiency.

As a next step, the Commission will make concrete proposals for strategies to improve resource efficiency in the various policy areas as outlined in Annex 1.

The Commission invites the Council, the European Parliament, national parliaments, the Committee of the Regions, the European Economic and Social Committee, candidate countries and stakeholders to contribute to the further development of these strategies and the promotion of resource efficiency.

Institutional and legal support of innovative activity in the Visegrad Countries

Long-Term Plan Of The State Science And Technology Policy By The Year 2015 [7]

(Slovak Republic)

1. INTRODUCTION

The Slovak Republic as a member state of the European Union (hereinafter referred to as the “EU”) has joined the efforts of the EU Member States to coordinate their state science and tech-

nology policies in line with the European Research Area policy the aims and priorities of which have been laid down in the Lisbon Strategy. Alongside with contributing to the implementation of the requirements of the European Research Area, the state science and technology policy of the Slovak Republic implements requirements of its own (for the period by 2010 specified in the Statement of Policy of the Government of the Slovak Republic) which is to ensure the economic and social prosperity. The state science and technology policy of the Slovak Republic, taking into account these two basic aspects, thus contributes not only to the development of a knowledge society of its own country, which is the basic pillar of the overall development of each country, but ultimately to the effort of the EU, which is to increase competitiveness vis-à-vis the United States and Japan.

2. MAIN OBJECTIVES OF THE STATE SCIENCE AND TECHNOLOGY POLICY BY THE YEAR 2015

To create conditions for the development of science and technology and more expeditious introduction of the results of research and development in practice requires to take a number of measures throughout the system of Slovak science and technology that will take account of the specifics of their domestic development on the one hand, and the objectives and aims of the Lisbon Strategy in the area of science and technology, on the other. The relevant objectives and aims of the long-term plan will be harmonised and interlinked so as to enable science and technology to respond flexibly to the internal (national) and external (international) demands. Their implementation will be continuously monitored, the progress assessed and subsequently they will be updated enabling science and technology to meet the expected mission to be inseparable component of the economic and social development of Slovakia and make a contribution to increasing competitiveness of the Community.

Science and technology as one of the three pillars of the development of a knowledge based society: *education – science and technology – innovation* must be at the centre of the attention of political and government bodies taking decision of the overall directions of the development of the Slovak Republic, so as to play the role

of the decisive development factor for the country. To this end, the state science and technology policy must set itself such objectives for the development and application of the system of science and technology whose achievement will ensure the expected role of the development factor. For this reason the main objectives of the state science and technology policy by the year 2015 shall include:

- increasing the involvement of science and technology in the overall development of the Slovak Republic – a more intense involvement of science and technology in addressing the economic and social problems of Slovakia. The increased involvement of science and technology in the country's development will entail increased contribution of Slovakia to the overall improvement of the competitiveness of the EU.
- in order to increase the involvement of science and technology in the overall development of Slovakia, it is vital to create such conditions for their development and exploitation that will take into account the specifics of their development in Slovakia on the one hand, and the objectives and aims of building the European Research Area on the other. On the whole, the conditions for the functioning of the system of science and technology must be harmonised and interlinked in such a way as to allow science and technology to respond flexibly not only to the internal (national) but also to external (international) demands.
- ensure conditions for the development and exploitation of science and technology by setting the objectives for the following areas:
 - a) coordination of science and technology,
 - b) the infrastructure of research and development,
 - c) systemic priorities of research and development,
 - d) substantive priorities of research and development ,
 - e) support for science and technology,
 - f) the framework organisation model of financing for science and technology in the Slovak Republic by the year 2015,
 - g) international scientific and technological cooperation,
 - h) evaluation of research and development,

- i) popularisation of science and technology,
- j) monitoring of the state science and technology policy.

3. COORDINATION OF SCIENCE AND TECHNOLOGY BY THE YEAR 2015

The efforts of the EU to increase efficiency of the synergic effect of all tools (financial, social, personnel, information, etc.) that shape the environment in which the system of science and technology operates, at all national levels, lead to the attempt to coordinate national science and technology policies in all countries of the EU. This requires and will require in the future coordinating the science and technology processes, vertically and horizontally, in every EU country.

In the vertical plane, Slovakia will have to improve (see the scheme in Annex 1) the mutual cooperation of the ministries, central bodies of state administration of the Slovak Republic (hereinafter referred to as “central authority”) and regional self-government authorities with the organisations of research and development and the subscribers and users of the results of research and development. It will be necessary to improve cooperation particularly between regional self-government authorities and research and development institutions and consumers of their results operating in the relevant region.

In the horizontal plane of ministries and other central authorities it will be necessary to improve cooperation between the Ministry of Education of the Slovak Republic (hereinafter referred to as “Ministry of Education”), ministries, other central authorities and branch associations of industry (see Annex 1), with a view to ensuring conditions for using science and technology as the basic instruments of development in every economic and social sector. The upgrading and improving of this cooperation must be reflected also the development of sectoral concepts of the directions and support of research and development (including the concept of the directions and support of research and development in universities and the concept of the directions and support of research and development in the Slovak Academy of Sciences), which the relevant ministries, central authorities and the Slovak Academy of Science will develop, elaborating on the

objectives and aims of the long-term plan, for their respective conditions in medium term under the coordination of the Ministry of Education.

By restructuring the existing positions in the ministries and other central authorities an optimal number of civil service positions will be created for erudite management in the area of science and technology, which within their work duties will deal only with the performance of sectoral competencies in the area of state science and technology policy and the coordination of activities in the area of science and technology. The implementation of the objectives of the European Research Area will require every Member State of the EU to coordinate its state science and technology policy with that of the EU, joint collection and exchange of information, identification of common objectives and regular assessment of the implementation of objectives for every state policy. Hence ministries and other central authorities will need sufficient number of civil service positions for a diligent implementation of these tasks. This objective is all the more important when considering the task of the ministries and central authorities to improve their mutual cooperation and pursue a coherent approach in the implementation of the objectives of the state science and technology policy and the sectoral policies.

The hitherto coordination of the contribution of science and technology to regional development is inadequate and not every regional authority accords this problem equal attention. In order to ensure regional development by means of science and technology it will be necessary, within the regional development policy, or the regional innovation strategy, to set the objectives and aims for the development and application of science and technology in the region. The implementation of these objectives and aims will call for inclusion of the corresponding activities under the activities of one of the units of self-governing regions' offices.

Every EU Member State is required through its ministries and central authorities to involve research and development experts, representatives of the economic sphere (industrial and agricultural) and cultural and social life early on in the drafting of essential conceptual materials relating to science and technology. By so doing it is hoped that mutual interlinking of the aims and

objectives in the area of science and technology with the needs of the user practice will be improved. However the cooperation of the ministries and central authorities with the experts of the cited areas will not be restricted to the area of developing conceptual materials only but will be extended to decision making of the ministries and central authorities, monitoring of the implementation of objectives of the state science and technology policy and its updating. The Council of the Government of the Slovak Republic for Science and Technology (hereinafter referred to as the "Government Council") has a particularly important position in involving the experts and representatives of economic and social practice in the decision making of the Government of the Slovak Republic for the area of science and technology in Slovakia. The Government Council is an advisory body of the Government of the Slovak Republic in the area of science and technology policies and in order to improve the links of science and technology with innovations it is vital that it become an advisory body of the Government for the area of innovation policy. To achieve this, new Government Council will be created constituted in cooperation with the representatives of all institutions having competencies in the area of science, technology and innovations.

The Committee for Knowledge-based Society (hereinafter referred to as the "Committee"), which is a coordination, advisory expert body of the Government of the Slovak Republic for the issues of the development of a knowledge-based society, will also be involved in the process of coordination of science, technology and innovation. The Committee will have an advisory role for the achievement of harmony between the objectives in the area of science, technology and innovation and the overall context of the development of a knowledge society.

The use of a special methodology of forecasting, which is commonly applied in the old EU Member States and which is known under its denotation "Technology Foresight" will be one objective in the area of defining medium-term and long-term objectives and aims of the state science and technology policy and regular evaluation of their implementation and updating.

The European Commission expects every Member State of the EU to use this methodology, which entails that beside nation-

al experts also foreign experts will be involved in its processes, which is intended to open the state policy to the policies of the other Member States of the European Union, with a view to ensuring competitiveness.

4. THE INFRASTRUCTURE OF RESEARCH AND DEVELOPMENT

4.1 The area of human resources in research and development

Available human resources are the basic prerequisite for the development of science and technology; they are the prerequisites needed to increase the competitiveness of the Slovak economy, more expeditious modernisation of the whole society, and, ultimately, they are the necessary preconditions for a successful development of the knowledge society in its full range. Indeed, well-educated human resources are the necessary preconditions for the development of the knowledge society, which is why education as one pillar of the knowledge society will be subject of a special attention of the long-term development and exploitation of science and technology.

Beside the development of the Slovak education system, special attention will be paid to encourage the involvement of Slovak research and development organisations in the system of education, research and innovation activities of the currently prepared European Institute of Technology (hereinafter referred to as “the EIT”) through so-called Knowledge and Innovation Communities. The EIT will be the umbrella for the integration of education, research and development and innovation at European level.

Human resources of research and development are a crucial factor to advance scientific knowledge, technological progress, to improve the quality of life, the prosperity of the European citizens and to contribute to the European competitiveness. It is vital to create an open and sustainable European labour market and ensure adequate and highly educated human resources in the research and development.

With a view to ensuring qualified human resources in adequate numbers for the system of science and technology we

will have to boost the interest of young people in working in research and development, which entails to focus the attention on raising and educating potential research and development workers already in primary schools, continue at all types of secondary schools, universities and ensure for both the research and development workers lifelong training.

Therefore in the education and training for a professional career in research and development the emphasis will be laid on the development of regional education, with a view to making science and technology attractive and accessible to pupils and stir their interest for the activities in science and technology already from the upper grades of primary school by suitable adjusted teaching subjects curricula highlighting the contributions of science and technology to increasing the quality of people's life. Equally students will be stimulated for selecting science and technology as their vocation within extracurricular activities. This approach to securing sufficient human resources for science and technology in all age categories is common in all old Member States of the EU. To pursue this objective, it will be necessary to equip primary schools and all types of secondary schools with modern technical teaching aids and laboratories. The Structural Funds in particular will be one source to secure the modern equipment of regional schools in the forthcoming seven years.

In higher education the main objective prompted by the needs of the European labour market will be to flexibly adjust the content of the study programmes to the needs of practice and also create new study programmes. Furthermore, it will be important to raise the interest of secondary school students to study in all disciplines of science and technology courses (Section 6 paragraph 3 of the Act No.. 172/2005 Coll.) contained in the study programmes of university study, as there is a need to ensure continuity of expertise in all disciplines of science and technology.

At the first two levels of tertiary education the aim will be to concentrate on attracting students with aptitudes for science and technology and encourage them to continue upgrading their qualification by taking up doctoral study. PhD study programmes will be conceived so as to enable PhD students to actively participate in solving research and development projects and gain

experience also during the time spent in business organisations of research and development and in the organisations of research and development abroad. The creation of conditions for mobility of PhD students and young research workers through support programmes, with the Ministry of Education as the guarantor, is the basic prerequisite for increasing qualifications of young human resources. To encourage the interest of the young generation to remain working in the research and development, a system will have to be created that would facilitate PhD graduates to find employment in the research and development.

Another objective in the field of human resources will be to attract the research and development workers working abroad to return back and work in the Slovak organisations of research and development. It is therefore important to develop a system that will facilitate young researchers returning from research fellowships abroad to reintegrate in the Slovak research and development organisations.

Another objective is to secure permanent qualification advancement for the research and development workers, which implies the creation of a system of upgrading qualification for research and development staff with a view to achieving certain qualification degrees. The lifelong professional training in research and development with gaining of certain qualification degrees will become the basis for the career advancement of an employee in research and development and his or her financial remuneration. In this respect we will have to increase awarding of the employee in research and development for every qualification degree obtained.

In connection with the professional qualification growth of research and development employees it will be necessary for the universities to involve more actively in the design of training modules for employees of small and medium sized enterprises by means of their research and education centres and centres of technology transfer.

A technology and innovation mobility portal, linked to the mobility portals for research and development workers and part of the mobility centres of the European Research Area will foster mobility of the Slovak research and development work-

ers within the EU and also within the research and development sectors by introducing new information means for the mobilities offered to research and development workers at national level. The role of the mobility portals in relevant EU countries is to offer researchers information on potential mobilities, one of the major objectives by the year 2015. This new objective will create the need to put in place a central information portal for science within the European Research Area. The central information portal will provide also information on the systems of health and social insurance in the Member States of the EU, the introduction of supplementary pensions and the European health insurance cards.

The objective in the area of human resources in the research and development will be not only to ensure the return of the Slovak experts from abroad to the organisations of research and development in Slovakia but also to create conditions to make the Slovak organisations of research and development attractive for foreign specialists. In this area we will need to create more acceptable conditions for the stay of foreign experts in Slovakia by amending the Act on the stay of aliens in our territory. At the same time, we will have to improve the visa policy for experts from the third countries and lay down the terms and conditions for their activity in Slovak research and development organisations.

Alongside with the intend to attract human resources from an early school age and from university stage and hence reverse the trends of aging of the research and development community, conditions will need to be created also for the research and development workers to remain active in the research and development. Conditions will be created particularly to retain middle generation of researchers as the main driving force, so that they, upon achieving the relevant scientific qualification degrees remained working in the research and development, also with regard to the requirements of the newly emerging disciplines and groups of disciplines of science and technology. These conditions will be secured by creating reorientation support programmes that will help to flexibly address the problem of the need to reorient researchers for the work in a newly created science or technology discipline.

In this respect the priority objective will be to create sufficient material security for the qualified research and development staff and enhance the status of the employee of research and development in the public opinion which is important also in directing and increasing funds to support science and technology. A more positive perception of research and development and the significance of the activities carried out by their employees will secure also the objectives in the area of popularisation of science and technology.

Back in 2000 the European Commission declared the objective to improve the position and the role of women in the research and development. Its current efforts are directed at the EU Member States encouraging women working in research and development to promote their professional growth and to assert themselves in the leadership positions. The objective in this area will be to improve the conditions for the assertion of women in the research and development.

4.2 The area of technical infrastructure of research and development

In addition to highly qualified human resources a well-functioning system of research and development requires to have modern technical infrastructure of research and development (hereinafter referred to as the “technical infrastructure”).

Regular replacement and modernisation of technical infrastructure is necessary not only for the research and development carried out for the Slovak consumer sphere. To the same degree it is a condition for equal participation of the Slovak research and development organisations in the projects of close partnerships with the cutting-edge laboratories of the other EU states.

Modernisation of technical infrastructure will be implemented systematically and continuously by means of the support from the public funds (structural funds, national budget) and from business sources, in line with the principles applied within the European Research Area.

Beside the forms of support from the structural funds implemented in the period 2007 - 2013, by the year 2015, also the forms of financial support from the state budget will be provided on a continuous basis. There will be a requirement though for the

technical infrastructure modernised and maintained in this way to be available to all organisations of research and development, to public higher education institutions and the state research and development organisations free of charge. The organisations of research and development that will obtain support for building and modernising technical infrastructure from the public funds will be obliged to notify thus managed technical infrastructure to the Ministry of Education for it to make that publicly known. The Ministry of Education will post the list of technical infrastructure maintained from the public funds at the Central Information Portal for Science, Technology and Innovation making it publicly accessible to all those interested to use it. Those interested to use this publicly promoted technical infrastructure will, based on the list, directly contact the organisation of research and development managing the relevant facilities with a request for use. The use of the technical infrastructure will also be publicised on the central information portal.

Alongside of the form of direct financial support for building technical infrastructure from the public funds (state budget and structural funds) the objective is to ensure building technical infrastructure, particularly the major projects, such as science and technology parks through investment assistance – creating interesting conditions for investment into building and developing technical infrastructure for domestic and foreign investors.

The improvement of mutual cooperation of individual sectors of research and development (state sector, higher education sector, business sector and the not-for-profit sector) and each of them vis-à-vis the consumer practice contributes to intensified use of results of research and development in the economic and societal practice. The improvement of this cooperation will be ensured through improving mutual information facilitated by the Central Information Portal for Science, Technology and Innovation administered by the Ministry of Education and by creating and operating virtual networks whose role it will be to publicise and make the results of research and development available. For this reason it will be extremely important to build and operate virtual networks with a view to supporting the basic services for Slovak and European research and development community via a mechanism of the type used in case of trans-European networks (TEN-s).

4.3 Institutional background of science and technology

The higher education sector and the state research and development sector (the Slovak Academy of Sciences and sectoral contributory and budgetary organisations of research and development) are the generators of knowledge (results of the basic research) that cannot remain unexploited but must be made available to the subscribers from the economic or societal practice. It will be necessary to highlight that this knowledge potential should be licensed by reason of the protection of intellectual property.

In all countries of the EU the public sector of research and development (i.e. in Slovakia public higher education institutions, institutes of the Slovak Academy of Sciences, and the sectoral contributory and budgetary research institutes) is expected to focus more on the solution of the problems the results of which will have a higher level of transfer for the society insofar as there is very poor link between “knowledge driven research in universities” and the innovation. Hence the main goal will be to require the public research and development sector to step up the efforts to solve the issues in the fields of key economic and societal interest that will be exploited in practice, whereby the private sector will generate its activities on the results of research and development.

The sector of commercial research and development is expected to raise expenditure on research and development, in line with the requirement of the Lisbon Strategy so that the business sector would participate in the overall support of research and development by two-thirds.

Accordingly, the objective will be to create such legislative measures in the tax system that would motivate the business sector to increase investments in research and development.

In an effort to ensure conditions for the transfer of knowledge produced by the public research and development sector into economic and societal practice support will be given to such types of organisations as: the national centres of research and development, science and technology parks, technology centres, centres of excellence, spin offs, starts up, centres of technology transfer, and technology incubators. For more detailed specifications of these types of organisations, see Annex 2 to the material.

Regional self-government authorities will create conditions, within the scope of their competencies, for the establishment of the so-called regional start-up centres – business centres (they will provide advice and assistance to those interested to set up e.g. commercial research and development organisations, or organisations of technology transfer) and the start-up capital funds that will help with information and start-up capital resources to the starting private firms in the relevant regions. Beside these conditions self-governing regions will also ensure conditions for the creation of new types of regional partnerships of the public sector of research and development and the business sector.

In supporting organisations of research and development, special attention will be paid to foster small and medium-sized businesses concerned with research and development.

Research, development and innovation undertaken by small and medium-sized enterprises will be prioritised through new measures to obtain support from the state budget and the structural funds.

5. SYSTEMIC PRIORITIES OF SCIENCE AND TECHNOLOGY

By 2015 such systemic priorities of science and technology will need to be set as to make science and technology a harmonious and stable system, which will have an outward bound effect of being a dynamising element fully contributing to the economic and social development of the country. The systemic priorities in the area of science and technology in the outlook by 2015 will include:

- to achieve synergies from the support for research and development provided from different sources of support for research and development – state budget, commercial sources, structural funds, and the resources of the Seventh Framework Programme of the EU for research, technological development, and demonstration activities,
- ensure effective support for human resources of research and development and technical infrastructure of research and development,
- secure the corresponding direct and indirect support of science and technology,

- ensure effective implementation of public funds effected (funding from the state budget and the structural funds),
- direct to a significant extent the support from public funds at the research conducive to subsequent further exploitation, whereby the improvement of the linkage of basic and applied research will be pursued on the basis of the increased cooperation of the public sector with the business sector of research and development and the economic and societal subscriber practice,
- increase accountability of ministries and other central authorities for the development of their respective sectors by means of research and development, which will be implemented in practice by the development and implementation of “sectoral concepts of research and development”, and by setting aside resources in the ministerial chapters, the budget chapters of other central authorities and of the Slovak Academy of Sciences as designated support for science and technology,
- increase the economic and social contributions for Slovakia of the international scientific and technological cooperation,
- contribute through science and technology to raising the competitive capacity of domestic production and services.

6. SUBSTANTIVE PRIORITIES OF RESEARCH AND DEVELOPMENT

Apart from ensuring adequate resources for the support of science and technology, setting substantive priorities of research and development is one of the most significant objectives. Identification of substantive priorities draws on two main prerequisites, namely the available capacities of research and development by individual groups of science and technology disciplines, and the applicability of the results of research and development in the economic or societal practice. A more detailed justification for the need to have substantive priorities of research and development and the starting points for their setting are given in Annex 3.

In the Slovak Republic it is necessary to set substantive priorities of research and development in the outlook by 2015 that will apply to:

- the identification of themes for the state programmes of research and development, the drawing of funds from the Structural Funds under the Operational Programme “Research and Development”,
- the support for directed research and development through the Agency for Support of Research and Development.

Cross-cutting objectives of the proposed substantive priorities of research and development include:

- to ensure sustainability of the development of the country,
- the development of the knowledge society,
- to ensure a more profound economic and social contribution of research and development.

In their sectoral concepts for the directions and support of research and development the ministries, central authorities and the Slovak Academy of Sciences will set the substantive priorities of research and development in such a way as to avoid duplication with the substantive priorities of research and development approved in this material.

6.1 Proposal for substantive priorities of research and development

6.1.1 Health – quality of life

Annotation:

The research and development designed to ensure health of citizens will focus on the prevention and treatment of the most prevalent life threatening diseases and the diseases frustrating full involvement in work and societal life. It involves in particular the prevention and treatment of cardiovascular diseases, early diagnostics and treatment of oncologic diseases, which are diseases with highest mortality rates in Slovakia. Attention will be devoted also to virology and infectious diseases, clinical immunology, chronic degenerative metabolic diseases, applied microbiology, respiratory diseases, geriatric diseases, allergies, etc. Special at-

tention will be paid to the prevention and treatment of mental disorders, particularly depression, as the most prevalent condition in Slovakia obstructing the full quality life. The core themes will include:

- the promotion of a healthy life style – prevention is the best cure, knowledge is the best prevention;
- the transfer of knowledge of molecular medicine into clinical practice;
- the implementation of the knowledge potential of the human genome;
- genetics and medical biotechnologies.

Food products and their primary source, agriculture, are a factor that substantially affects the individuals' health and hence also their quality of life. In this respect attention will be given to the research and development in the areas:

- safer, healthier and better quality food products – increased consumption and global,
- food processing industry as potential risks to health,
- ecologisation of agriculture.

The individual's health and his work capacity are to a large extent affected by the working environment, working conditions, and good working relations. It is therefore necessary to direct the attention of research and development to the areas of good or decent work from the aspect of technical equipment, interpersonal relations, updating of vocational knowledge and skills of employees linked to the scientific and technological progress, and the creation of a system of social security allowing smooth and safe transitions between jobs.

6.1.2 Progressive materials and technologies

Annotation:

Globalisation of economy opens up a chance to succeed only to the highly specialised producers with a permanent innovation policy. Slovak producers face the challenge of having to place their products within the market of the EU and other countries. In order to succeed they need a system generating new knowledge, on a continuous basis, from the fields of selected materials and production technologies.

This necessitates a systematic development of research and development in new materials, such as construction materials (construction, engineering, consumer), functional materials (electrical, magnetic, optic, biocompatible, plastics), composite, multifunctional and intelligent materials, nanomaterials; in introducing new production technologies, including nanotechnologies.

Furthermore, it is necessary to refine analytical and numerical methods for properties forecasting of the equipment made of new materials (virtual testing) and develop suitable methods of measuring their properties. The assessment of potential health and environmental risks and the substitution of environmentally wrong materials in accordance with the chemical legislation of the EU (REACH) must be an integral component of research.

6.1.3 Biotechnologies

Annotation:

The research and development in the area of biotechnologies will be directed particularly at the industrial biotechnologies for the manufacturing of chemicals, materials and at bioenergetics using fermentation or enzyme catalysis, with the use of microorganisms or their enzymes. Research and development in this area will also focus on agribiotechnologies using the most recent knowledge of plant improvement, microorganism and animal breeding by means of targeted gene transfer with a view to improving the utility, nutrition and health values of food products and the economic parameters of the agricultural commodities.

6.1.4 Knowledge technologies supported with information and communication technologies

Annotation:

The volume of knowledge that is currently available to us exceeds considerably our capacity to use it effectively. The diagnostics of the current state of knowledge society in the historical perspective, the Quality of human potential in the symbiosis with the new function of research and development as the key factors of dynamic development of the country, the Development of technologies facilitating search for, classification, interpretation and

implementation of knowledge are the necessary preconditions for a successful progress of Slovakia as a knowledge society.

The research in this field must be directed at the development and application of technical means, information and communication technologies and mechatronics on the one hand, and the development of software allowing to solve the tasks of information management in the electronic services and the systems of effective management of various societal activities, on the other.

Greater attention of research will be devoted to the development of knowledge technologies, applying automated robotics-based complexes and using progressive laser, electron beam and plasma technologies.

6.1.5 Infrastructure of the society

Annotation:

Ensuring the development of the society's infrastructure is a major condition in the process of globalisation. Hence the decisive role in the forthcoming period will be held by the research and development focused on:

- the size and structure of the population by age groups, level of education, and regional distribution,
- the size and structure of unemployment and employment,
- the number and structure of the existing, created and lost jobs in the branches of economy and in the regions, including from the aspect of their qualification demands,
- optimisation of settlement and economic activities – landscape engineering from the aspect of sustainable development of the country,
- creation and protection of natural and rural potential of Slovakia,
- optimisation of transport needs of the society, the development and building of intelligent transport systems,
- planning of future development of transport with account taken of the impacts on social, economic and environment fields,
- the architecture of postal networks and technologies,
- telecommunications – the future-generation networks and services,

- digital interactive services of radio and television broadcasting,
- implementation of electronic communication services (e-commerce/e-business),
- creation of human microenvironment.

6.1.6 Energy and energetics

Annotation:

The energy supply industry of the European Union and Slovakia is currently dependent on the imports of the energy producing materials (crude petroleum, natural gas, uranium). For further development of economy and in order to secure adequate quality of life it is necessary to increase the energy security of Slovakia by means of efficient exploitation of energy sources found in our own territory. The research and development in a wide range of science and technology disciplines will be focused chiefly on new and renewable, ecologically acceptable sources of energy, rationalisation of energy consumption in all industrial and non-industrial branches, and the energy distribution.

To this effect it is vital to develop research and development in a number of areas: the research into the geothermal energy sources and their exploitation; development of technologies for obtaining electricity and heat from renewable sources (water, sun, wind, biomass); research into potential deposits of the energy producing materials (coal, crude petroleum, natural gas, uranium) in the territory of Slovakia and possibilities of their extraction; research into the nuclear energy with the emphasis on safety and storage of burned down fuel; research into the fourth-generation reactors and the issues of nuclear fusion (involvement of Slovakia in the global projects ITER and DEMO); the development of new systems of energy transmission (power cables eliminating stray electric and magnetic fields).

6.1.7 Civilisation challenges

Annotation:

In the area of social sciences the main focus should be on the search for solutions of the problems of social inclusion/exclusion, the accompanying symptom of which are factors prevent-

ing from full realisation and decent life of citizens of marginalized groups. The research in this area will also look at the problems of education for citizenship, the transformation of values and the position of the individual in the social relations network, partnerships, networks and targeted activities to involve all the actors on the labour market designed for the prevention and solution of the implications of social inclusion.

Other areas of research and development will include the development of methods and forms of education, effective management, internationalisation of the EU area, including the issues of the growing population migration and its implications for the population of Slovakia.

Globalisation, as a dynamic, multidimensional process of economic, social, political, technological, ecological, cultural, religious, military-strategic and other change, the new opportunities and threats – they all penetrate the lives of the nations, increasing their existential linkage and dependence. The profound changes in the functioning of the world economy, in the interaction with other aspects of the globalisation processes, make new demands on the adaptability of small countries, such as Slovakia, with an open economy, and create a need to address through research such problems as:

- globalisation and its impact on the dynamics of the social change in the Slovak Republic,
- the human, social and cultural capital – the strategy of their development under the conditions of globalisation,
- the area of social insurance,
- the European law and the legal conscience of the Slovak society.

6.1.8 The cultural and artistic heritage of Slovakia

Annotation:

Globalisation in the post-modern era raised several essential issues for the society that concern the economy, policy and communication but also the problems of national culture, and minority cultures, cultural heritage and other segments of culture, their preservation and development. The European Union has declared its commitment to be unified in its diversity.

The challenge of intense study, preservation and, where possible, digitalisation and archiving of the artefacts of national culture and the culture of minorities, be it in the area of language or literature, fine arts, architecture, music, folk culture or other areas of culture, is extremely important for all nations of the European Union.

The objective of the research programme is to show that the national culture has been evolving in the European context and that it belongs to this context and to the European conscience. The contribution of Slovakia to the European and the world cultural heritage must be intensively studied and made visible for the specialist and subsequently also general public worldwide.

6.1.9 Security and defence

Annotation:

The safeguarding of the population against threats such as terrorism, natural disasters, man-made disasters, and other catastrophes has been reserved by the European Commission for the competence of the Member States of the EU and simultaneously included in the FP 7, in which only a fraction of the needed research is being ensured under topic 10 of the Specific Programme "Cooperation". It involves an interdisciplinary theme, in which participate jointly natural, technical and social sciences and humanities. Research is oriented so as to allow ensuring prevention, management of particular catastrophes and subsequent consolidation of the situation. The core of the research draws on the technology and research into new types of detectors (of chemical and biological weapons of mass destruction, explosives, radioactive materials, drugs, etc.), information technologies (presence of persons, objects, communication, simulation, risk analysis), solution of healthcare in the field, management of shocks, stress, and consolidation of economy, transport, and communications. The research will be aimed at civil exploitation, only exceptionally the security classification regimen is assumed.

The programme directions of the defence research and technology development should mainly focus on the objectives following out of the membership of the Slovak Republic to the NATO and the EU. They include in particular:

- systems of reconnaissance, surveillance, and identification in the urban (build up) area,
- detection and identification of biologic and chemical substances and toxic chemical substances, protection against them and decontamination,
- digitalisation and integration of means into centrist networks,
- protection and security of information systems,
- reduction of observability,
- systems modelling and simulation,
- creation of common operational picture,
- exploitation of nanotechnologies in the defence systems;
- micro-electromechanic systems (MEMS),
- protection of live force and increasing of ballistic protection,
- mobility in the built up areas.

6.1.10 Exploitation, protection and reproduction of biologic sources

Annotation:

Modern, perspective and sustainable agriculture (agriculture, food processing industry and forestry) is a complex of multifunctional systems, with complex biological processes, as the foundation of the production processes, which are implemented in an open variable space of the country, using, protecting and reproducing the resources comprising the main components of the nature and environment, and are subject of research in every developed country.

The subject of research in agriculture will be the identification and evaluation of soil deficits in the territory of Slovakia, gathering information on the essence of the exploitation of living organisms, actions within them, and the interactions of animate and inanimate components of agriculture. Conditions will be created that will be used for developing public policies facilitating a balanced development of agriculture and rural areas by means of making greater use of production factors. New knowledge will also support the competitiveness of Slovak food produce, while respecting the international WTO rules (World Trade Organisa-

tion). The acquisition of new knowledge of the properties and functions of the soil cover of the SR, coupled with the creation of optimisation programmes of multifunctional use of soil and its protection against the degradation processes will be the starting point for the sustainable regional development of the SR.

In food industry research will involve the elimination of detrimental, potentially detrimental and thus far unexplored effects on foodstuffs, and the diet modelling along the intentions of most recent body of knowledge of human nutrition.

Flexible and adaptable schemes and methods of exploitation of sustainable forestry management will be formed, which will permit to strengthen the ecological stability, rational exploitation of natural resources and functional landscape potential, whereby new impulses will be created for a comprehensive development of the rural landscape and increased employment in socially most vulnerable regions.

6.1.11 Environment protection

Annotation:

This priority comprises all the areas of the environment protection and the involvement of human resources in the improvement of environment ranging from the research into the state of environment, the study of the environmental impacts of human activity, to the technology of environmental protection. The emphasis is laid on areas, such as prevention of degradation and contamination of environment, the techniques of waste processing and disposal, recycling, research and development in the area of measures against negative impacts of climatic changes.

A special emphasis will be on the research into:

- environmental aspects of settlements and landscape with a view to securing sustainability of their development,
- creation of job opportunities and potential avenues of using human resources in the interest of improving the environmental conditions,
- the impact of electromagnetic fields on the living organism.

The study of mutual connections and interdependencies between the economic, social and environmental development will

be an integral part of research, with regard taken of the impact of globalisation and integration as the key conditions of sustainable development, with a view to achieving high quality of life of citizens, both at national and regional level. Identification of those elements of sustainable development that support all its aspects and that create barriers for this process requires special attention.

6.1.12 Exploitation of domestic mineral resources

Annotation:

The exploitation of the potential of the Slovak mineral resources is one of the starting points how to ensure a balanced regional development and create new job opportunities. The manufacture of final products based on domestic raw materials constitutes a significant contribution to increasing the added value and competitiveness of the production. Yet, the intensification of the exploitation of domestic raw materials must be based on considerations for environmental principles and the principles of sustainable development.

The research and development will be directed at increasing the degree of utilisation and finalisation of domestic natural, particularly, renewable resources. The focus will be on the research and development of engineering components, products and materials based on wood, with improved utility properties; ecologisation of the production, for example, of sulphide and natron pulps, and the development of new kinds of paper for digital printing, the improvement of the parameters of materials for the manufacture of packaging. In additions, research and development activities will have to be aimed at the achievement of higher finalisation of magnetite processing, basalt processing, the processing of raw materials on the basis of silicates and clay materials.

7. THE SUPPORT FOR SCIENCE AND TECHNOLOGY

In order to ensure increased expenditure on science and technology from the state budget and to have a transparent overview of the actually required spending on science and technology in all budget chapters for the ensuing budget year, it will be necessary for the Ministry of Education to coordinate, in cooperation with

the administrators of budget chapters (the other ministries, central authorities, and the Slovak Academy of Sciences) the preparation of a joint proposal of the state budget for science and technology in the Slovak Republic for the relevant budget year. Hence the objective will be to propose in the budget for the relevant budget year and keep track of the “summary draft revenues and expenditures of the state budget for science and technology in the Slovak Republic for the relevant budget year.” In practical terms this implies that the Ministry of Education will coordinate the provision of resources from the state budget in the budget chapters of the other chapters’ administrators for the implementation of their sectoral development goals through research and development. This goal will be implemented also through legislative avenue, namely within the amendment of the Act No. 172/2005 Coll. on the organisation of state support of research and development, scheduled to be approved in 2008.

The support for science and technology is the most important systemic priority. It is implemented by means of two forms, direct and indirect support. As a rule, attention in this respect used to be focused on direct support, but owing to the need to ensure increased share of business resources for the development of science and technology, in accordance with the Lisbon Strategy, it will be necessary to focus also on the area of indirect support for science and technology and establish incentives for the business sector.

7.1 Direct support of science and technology

To ensure the implementation of the objectives and goals of the development of science and technology by 2015, a total expenditure on science and technology will be required at 1.8% of the GDP in 2015.

One important priority in the direct support for science and technology will be to raise the participation of the business resources in the support of science and technology so as to reach a 2/3 proportion of these resources in the overall support for science and technology in 2015. Therefore in order to ensure increased participation of business resources it will be necessary to create incentives of indirect support for business entities and

to improve the collection of data on investments of these entities for statistical reporting, in accordance with the OECD standards.

The trend of setting the increase in the total expenditures for science and technology by the year 2015, including the increase in the expenditures from the state budget, business sources and foreign sources, must be based on the fact the overall expenditure on science and technology in 2015 will comprise 1.8 % of the GDP, and that the share of expenditures from the business sources in 2015 will reach the value of 2/3 of the overall expenditures. The following table gives the information on the estimated expenditures on science and technology in relevant budget years from the state budget, from business sources and from foreign sources by the year 2015.

Explanation for the table: SB – The amount of expenditure from the state budget in billion SKK in relevant budget years is estimated from the data expressed as % of the GDP and the estimate of the growth of GDP by 2015, given in Table 2 of the Financial Impacts Clause.

If we want to estimate the development trend in the support of particular components of institutional support and designated support, we have to start from the fact that in 2015 the ration of IS to DS should be 35%: 65%;

If we want to estimate the development in the support of particular components of institutional support (IS), then we have to start from the fact than in the year 2007 the IS of HE budgeted at 2.2 billion SKK (1.2 billion SKK – science at higher education institutions (HE) + 1 billion SKK – wages of teachers of HE), IS of SAS at circa 1.5 billion SKK and the IS on other sectoral research institutes is budgeted at around 500 mil. SKK. This means that the total institutional support in 2007 is budgeted at around 4.2 billion SKK. If in 2015 the institutional support should make up 35 % of the overall expenditure from the SB on Science and Technology, this means that in 2015 the IS will be at around 5.73 mil. SKK. From the amount of IS in 2007 and in 2015 we are able to estimate the year-on-year decrease in IS, which will be at circa 3.125 billion SKK.

If IS in 2007 is directed at 52.38% to support higher education institutions, at 35.71 % for the support of the Slovak Acad-

emy of Sciences, and at 11.91% for the support of other sectoral research institutes, and if we assume the expenditure on the cited items to be effected at this ratio also in 2015, then in 2015 the expenditure on HE will be circa 3.00 billion SKK, on SAS 2.05, and on OSRI circa 0.68 billion SKK, respectively.

DS in 2007 is budgeted at circa 2.8 billion SKK. If we want to reach in 2015 a ratio of IS to DS of 35%: 65%, then in 2015 the designated support will be at circa 10.63 billion SKK. DS in the years 2008 and 2014 can be estimated from the year-on-year increase by 3.125%.

The estimate of resources for designated support (DS) is still subdivided into the estimate of the expenditure on SPJ R+D (a new form of support of sectoral projects) and, pursuant to Section 5 paragraph 2 of the Act No. 172/2005 Coll., the estimate of the distribution of designated support among 3 items according to the “National Programme for the Development of Science and Technology”.

The estimate of expenditure for SPJ R+D draws on the fact that the expenditures for DS in the sectors in 2006 was around 500 mil. Sk³ and we want to achieve that they make up maximum 15% of the total DS in the relevant years. Hence, the expenditure on SPJ R+D in 2015 will amount to around 1.60 billion SKK and in the relevant years will reach the estimated values given in the table. The estimate of expenditure on the 3 items of the “National Programme for the Development of Science and Technology” is based on the objective to have the ratios between STP R&D: ASRD : CHS SSTP in the relevant years by 2015 at 35%:35%:15%. From the estimated expenditure for CHS SSTP the estimate for International Cooperation is separately set aside (IC makes up 50% of the estimated expenditure for CHS SSTP), which is an important item to ensure equal participation of the Slovak Republic in the common competitive environment of the European Research Area.

7.2 Indirect support of science and technology

One of the main objectives of the Lisbon Strategy is to bring up the proportion of expenditure of the business sphere to a level of 2/3 of the total expenditure on science and technology. Therefore, the main objective in indirect support of science and technol-

ogy will be to introduce tax instruments the application of which will ensure increased investment by the businesses entities into science and technology.

In the light of the current state in the participation of business sources in the overall support of science and technology, which in 2005 was at circa 37%, it is necessary to put in place indirect instruments that will operate as motivation factors for the private sphere to invest more in the support of research and development, because it is expected (according to Table 1) that the business resources will co-participate at 2/3 in the overall expenditure in 2015. The EU countries implement these incentives most commonly by measures taken in their tax systems (see Annex 1). Hence the main objective in the indirect support of science and technology will be the introduction of tax instruments for the business entities to increase their investment in science and technology.

However, the introduction of tax incentives must be compatible with the EU legislation, as the tax incentives introduced by particular countries of the EU have to comply with the condition of non-discrimination of certain entities in the common competitive environment, they must not be in conflict with the legislation on the provision of the State aid, and upon their introduction, their contribution must be evaluated on a permanent basis. For these reasons, the Ministry of Education in working with the Ministry of Finance of the Slovak Republic must conduct an analysis for the introduction of tax incentives for the business sphere that will evaluate consistently the conditions and possibilities for the proposal of a concrete type of tax incentives.

8. FRAMEWORK MODEL OF THE ORGANISATION OF SUPPORT OF SCIENCE AND TECHNOLOGY IN THE SLOVAK REPUBLIC BY 2015

In the period of 2007 – 2015 the science and technology in the Slovak Republic will be supported mainly from the following sources of support:

- state budget of the Slovak Republic,
- resources of the Structural Funds of the European Union, business sources,
- international sources.

8.1. Support from the State Budget of the Slovak Republic

From the state budget financial support for science and technology will be secured through the state budget chapters of:

- the Ministry,
- other ministries and central authorities that ensure the solution of their sectoral problems through research and development,
- The Slovak Academy of Sciences.

The state budget funds designed for the support of science and technology will continue to be provided as:

- institutional support ,
- designated support (via public competitive calls – provision of so-called „grants“).

The institutional support of science and technology (hereinafter referred to as “institutional support”) will be provided through the budget chapters of:

- the Ministry, for the public higher education institutions and state higher education institutions,
- the Slovak Academy of Sciences for the state budgetary and contributory institutes of the Slovak Academy of Sciences,
- the state budgetary and state contributory sectoral institutes, founded by other ministries, or central authorities.

The institutional support to the cited organisations will be provided on the basis of contractual relations between the provider of the institutional funding and the relevant organisation, with a specification of the substantive directions for the use of institutional funding.

The designated support of science and technology from the state budget (hereinafter referred to as “ designated support”) will continue to be provided through the state programmes of research and development, the state programmes for infrastructure development of research and development, the Agency for the Support of Research and Development, and through the newly introduced category of so-called “sectoral research and development projects”. This category of projects will be officially introduced within the amendment of the Act No. 172/2005 Coll.

The designated support will be provided in accordance with the results of the public competitive procedure, and on the basis of a contract in which the terms and conditions of the use of designated support funds will be specified.

The objective is for the designated support to have a growing trend relative to the institutional and that ratio of the institutional to designated support in 2015 should reach 30% : 70%.

8.1.1 Support of science and technology from the budget chapter of the Ministry

8.1.1.1 Institutional support of science and technology through the Ministry

The institutional support through the Ministry will be implemented through:

- the Scientific Grant Agency (hereinafter referred to as „VEGA“)
- and the Cultural and Educational Grant Agency (hereinafter referred to as „KEGA“).

VEGA, as a joint advisory body of the Deputy Prime Minister of the Slovak Republic and the Minister of Education and the President of the Slovak Academy of Sciences (hereinafter referred to as the “SAS”) for the selection of institutional projects of public and state higher education institutions and the SAS, will continue to ensure a common competitive environment for the selection of institutional projects for the support from the state budget. The higher education projects selected for the SB support will continue to receive the support from the budget chapter of the Ministry, and the institutional projects of SAS, from the budget chapter of the SAS.

KEGA, as an advisory body of the Deputy Prime Minister and the Minister of Education will continue to exist and will ensure the technical assessment of projects applying for support on publishing of university study texts, textbooks, and for other activities securing the teaching process in higher education institutions.

8.1.1.2 Beneficiaries of funds: higher education institutions in the Slovak Republic Designated support of science and technology through the Ministry

From the budget chapter of the Ministry, as the central body responsible for the development and implementation of the state

science and technology policy, science and technology will be supported, in the designated form, by means of a public competitive call open to all organisations of research and development in the Slovak Republic, through the following forms of support:

- state programmes,
- state programmes of infrastructure development,
- projects of the Agency for the Support of Research and Development,
- programmes of the Agency for the Support of Research and Development,
- investment assistance for building major technical infrastructure.

Beneficiaries of funds: organisations of the higher education sector, state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act; domestic and foreign investors.

8.1.1.2.1 State programmes of research and development

State programmes of research and development will draw on the themes of the state programmes approved by the Government of the SR in the long-term plan. They will ensure fulfilment of the requirements of the state to develop certain economic or social areas of Slovakia through research and development. Their fulfilment will be implemented by the state programme projects whose period of solution will be limited to three or maximum four years. State programmes will be formulated for 9 years, with 3-year control phases for review and potential subsequent updating.

Beneficiaries of funds: organisations of the higher education sector, state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act.

8.1.1.2.2 State programmes of the infrastructure development of research and development

Through the state programme of infrastructure development support will be given to the foundation and initial stage of

functioning of a special type of organisation that will ensure the knowledge transfer into economic or societal practice.

From the organisations that will ensure knowledge transfer, the Ministry of Education will, from 2008, provide support for the establishment and initial phase of the existence of the National Centres of Research and Development and the Science and Technology Parks, through state programmes of infrastructure development.

The other types of organisations for knowledge transfer: the Technology Centres, Centres of Excellence, Technology Transfer Centres, Technology Incubators, Spin offs, Start ups will be supported by means of other state programmes of infrastructure development that can be supported through the Agency for the Support of Research and Development (hereinafter referred to as the "Agency").

Beneficiaries of funds: organisations of the higher education sector, state sector of research and development, business sector of research and development, not-for-profit sector of research and development.

8.1.1.2.3 Programmes and projects of the Agency for the Support of Research and Development

The Agency will continue to provide financial support for:

- Research and development projects that will pursue the research requirements of the research and development workers from the areas of the basic research, applied research and experimental development;
- Agency programmes within which support will be provided for the targeted research to be set by the Agency Presidium,
- Participation of the Slovak organisations of research and development in the framework programmes of the EU for research, technological development and demonstration activities (Seventh Framework Programme of the European Union for research, technological development and demonstration activities (hereinafter referred to as "FP 7") and FP 8), and in the projects of bilateral science and technology cooperation and in international research centres.

The Agency will provide financial support also for:

- Projects of directed research that will be consistent with the Agency priorities identified under section 6.1 of the present material,
- State programmes whose directions and content will be drafted by the Ministry of Education and approved by the Government of Slovak Republic,
- State programmes of the infrastructure development designed to support the foundation and initial stage of centres of excellence, centres of technology transfer, technological incubators, spin offs, and start-ups. The content of the state programmes of infrastructure development will be drafted by the Ministry of Education and approved by the Government of Slovak Republic.

Beneficiaries of funds: organisations of the higher education sector, state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act.

8.1.1.2.3 Investment assistance for building major technical infrastructures

The Ministry of Education will create conditions for the provision of investment assistance for domestic and foreign investors to build major technical infrastructures, such as science and technology parks.

Beneficiaries of funds: domestic and foreign investors

The financial flows from the state budget to support science and technology via the Ministry are demonstrated in Annex 4.

8.1.2 Support of science and technology from the budget chapters of other ministries, other central authorities and the SAS

State budget resources for the support of science and technology will also be provided from the budget chapters of other ministries, other central authorities and the SAS as follows:

Institutional support,

Designated support.

8.1.2.1 Institutional support of science and technology through other ministries, other central authorities, and the SAS

a) Institutional support through other ministries and other central authorities will be provided to secure the performance of the activities:

of the state sectoral research institutes, founded by the cited bodies and having the budgetary (fully subsidised) or contributory (partly subsidised) economic form. However with a tendency of increasing the amount of designated support from the state budget these institutions set up in the state interest will have to supplement the institutional support by applying for funds from designated support via the announced public competitive calls.

Beneficiaries of funds: state sectoral research institutes with budgetary or contributory form of economic management set up by other ministries or central authorities.

b) Institutional support of science and technology through the SAS will be provided to ensure the performance of activities:

of budgetary or contributory institutes of the SAS established by it.

Institutional support through the SAS will be implemented via VEGA, specified in more detail under Section 8.1.1.1.

Beneficiaries of funds: budgetary or contributory institutes of the SAS.

8.1.2.2 Designated support of science and technology through other ministries, other central authorities

The designated support from the state budget will be provided not only from the budget chapter of the Ministry but also from the chapters of other ministries and central authorities via a new category of so-called "sectoral projects of research and development" (hereinafter referred to as "sectoral project"). This category of designated support will be stipulated in the amendment of the Act No. 172/2005 Coll. and will enable sectoral ministries and central authorities to ensure the development of specific needs of the sector concerned through research and development.

Beneficiaries of funds: organisations of the higher education sector, the state sector of research and development, business

sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act.

The financial flows from the state budget to support science and technology via the budget chapters of other ministries, other central authorities and the SAS are demonstrated in Annex 4.

8.2 Support of science and technology from the Structural Funds of the European Union

Apart from the resources of the national budget, in the period of 2007 to 2013, the resources of the Structural Funds will be an integral part of the public expenditure participating in the support of science and technology in Slovak Republic, namely from:

- The European Regional Development Fund,
- The European Social Fund.

From the former fund, the resources will be provided via the Operational Programme “Research and Development” and from the latter via the Operational Programme “Education”. The Ministry of Education shall be the Managing Authority for both operational programmes.

Beneficiaries of funds: organisations of the higher education sector, the state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act.

8.3 Support of science and technology from the business sources

Another source that will co-participate in supporting science and technology in Slovak Republic by 2015 will be the funding from the business sources. There will be a requirement that business sources take part, in addition to the state budget funding, in the solution of:

- State programmes,
- State programmes of infrastructure development,
- Agency projects,
- Agency programmes,
- Sectoral research and development projects,

– Investment assistance for building major technical infrastructures (hereinafter referred to as “investment assistance”).

Beneficiaries of funds: organisations of the higher education sector, the state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act; domestic and foreign investors.

8.4 Support of science and technology from international sources

The resources from the international sources, particularly from the programmes of the European Union will be another source that Slovak research and development organisations will be able to apply to for funding.

In 2007 to 2013, the greatest volume of funding from the European programmes, around 54 million EUR, will be committed for the Seventh Framework Programme.

According to particular programme directions of FP 7 and the type of economic management of the Slovak research and development organisations, state budget resources will have to participate in the financing of FP 7 projects, and in the case of business research and development organisations, their own resources as well.

Beneficiaries of funds: organisations of the higher education sector, the state sector of research and development, business sector of research and development, not-for-profit sector of research and development, natural persons of research and development within the meaning of the Trade Act.

8.5 Framework rules and criteria for the provision of support from the public sources

8.5.1 Framework rules and criteria for the provision of designated support from the state budget

In providing state budget funding through the designated support, the following rules shall apply:

- the basic research shall be supported at 100%,
- the applied research shall be supported at 50%,

– the experimental development shall be supported at 25% with additional rule that the state budget expenditure in applied research and experimental development can in the following cases be raised by an amount of :

- 10% at most, where it involves the solution of an international research and development project,
- or additional 10% at most, where it involves a cross-border project provided the results thereof will be disseminated and made available,
- or additional 10% at most, where it involves the state aid provided to regions;
- and additional 10% at most, where it is provided to small or medium-sized enterprise.

The maximum amount of state aid, despite the allowances referred to above, in the case of:

- applied research cannot exceed 75%,
- in the case of experimental development, 50%, respectively.

The designated support from the public funds for research and development will be provided to business research and development organisations pursuant to the Act No. 231/1999 Coll. on the state aid, as later amended.

To promote cooperation in research and development of small and medium-sized enterprises with universities, organisations of state research and development sector (including the SAS) and the business research and development organisations, a new incentive will be put in place through the amendment of the Act No. 172/2005 for SMEs that will enable them to receive additional 5% from the state budget in case of the support for the applied research and experimental development. However, the basic condition for the 5% increase will be that the results of research and development will have to demonstrate measurable increase in the added value for the economic growth. In the case of applied research the maximum amount of state aid, in aggregate, cannot exceed 80%, and in the case of experimental development, 55%, respectively.

In the horizon by 2015, the main objective in the designated support through the main forms of support, namely:

- State programmes,
- State infrastructure development programmes,
- Agency projects,
- Agency programmes,
- Sectoral research and development projects,
- Investment stimuli for building large technical infrastructure.

will be to achieve the synergic effect.

In conformity with this objective, the main forms of support will be required to meet the following rules and criteria.

8.5.1.1 State programmes of research and development

Framework rules for state programmes include:

Through state programmes ensure the fulfilment of the demands of the state to develop certain economic or social areas of Slovakia via research and development,

In formulating the content of state programmes to draw on the substantive priorities of research and development approved by the Government in the long-term plan,

To combine the solution of state programmes of infrastructure development with the projects of state programmes which entails to link the support of the research theme with building and modernising of the technical infrastructure and the human resources of research and development,

Yet, the resources for the solution of a state programme project cannot be used in duplication for the same purpose within the solution of a state programme of infrastructure development,

The period of state programme implementation shall be 9 years, with 3-year control stages for their review and potential subsequent updating,

The results of the solution of a state programme must be used in the social or economic practice – they must have a subscriber.

Framework criteria for the financial support of state programmes:

The implementation of the state programme will be ensured through the projects, with a duration of three to maximum four years,

Insofar as the results of the solution of a state programme must be exploited in social or economic practice, the solution of

the state programmes will be ensured by the projects of applied research and experimental development,

The research and development organisations from at least two different research and development sectors must be simultaneously involved – from higher education sector, state sector, business sector, or not-for-profit sector,

A state programme project must have a contractually confirmed subscriber of its results,

Insofar as the solution of a state programme must be ensured by the projects of applied research and experimental development, co-financing of state programme projects from the resources of the subscriber and from commercial sources must be secured alongside the state budget funding, so as to get a 1:1 ratio of co-participation of these resources in the solution of a state programme - the state budget to the subscriber source and commercial resources.

8.5.1.2 State programmes of infrastructure development of the research and development

Framework rules for the state programmes of infrastructure development include:

- To ensure the development of technical infrastructure for research and development in certain areas with a view to creating basic conditions for the implementation of research and development primarily for the benefit of economic or social development of Slovakia;
- In order to obtain the synergic effects in the support of research and development, support will be given to the development of technical infrastructure of research and development primarily in those areas that are also the areas of substantive priorities of research and development;
- The state budget resources will support the building of research and development technical infrastructure in a way that will avoid duplication in Slovakia in the same area of research and development;
- Through the state programmes of infrastructure development, support the setting up and the initial stage of

organisations that will be responsible for the knowledge transfer in economic or social practice;

- The research and development technical infrastructure built through the state programmes of infrastructure supported only from the state budget must be publicly accessible to the research and development organisations of the higher education and state sectors;
- Ensure building of the research and development technical infrastructure also from the business sources.

Framework criteria for the financial support of the state programmes of infrastructure development:

- The state programmes of infrastructure development will be executed by means of projects with a duration of three to maximum four year;
- The technical infrastructure built in the initial phases from the state budget support must in the ensuing phases of existence have operations and modernisation ensured also from other sources than the state budget;
- To ensure co-financing of state programmes of infrastructure development also from the businesses sources, in addition to the state budget resources, so as to make co-participation of these two sources - the state budget and business sources at a ratio of 1:2, which should lead to constructing of the common technical infrastructure of research and development for the public and business sector of research and development;
- The contract concluded for the solution of the project of state programme of infrastructure development supported from, both, the state budget and the business sources shall establish the conditions for the use of infrastructure thus constructed by businesses and by the public sector organisations of research and development.

8.5.1.3 Programmes of the Agency for the Support of Research and development

Framework rules for the Agency programmes:

- through Agency programmes, ensure financial support for the goals and objectives in research and development,

- selected by the Agency Presidium, in a line with the long-term plan,
- to submit to the Minister of Education for approval the draft programmes of the Agency, drawn up by the Agency Presidium, on the basis of goals and objectives selected by it;
 - Focus the Agency programmes particularly on the support of cooperation of the public sector (higher education sector and state research and development sector) with the business sector; support the transnational scientific and technical cooperation, support the human resources development in research and development, support the popularisation of science and technology in the society.

Framework rules for the financial support of the Agency programmes:

- In accordance with the character of the programme, ensure financing of the Agency programmes also from other sources than the state budget, namely from the business resources;
- Ensure differentiated co-financing of the Agency programmes designed to support technical infrastructure from the business sources at 2/3 of the total cost of any Agency programme;
- In the case of the Agency programmes focused on a selected substantive research and development issue, require in the projects by which particular programme is implemented, the provision for a contractually confirmed subscriber of the results.

8.5.1.4 The Agency Projects for the support of research and development

Framework rules for the Agency projects:

The Agency will support two types of research and development projects:

- projects proposed by the investigators themselves, on the basis of their research requirements (within so-called the “general call”)
- and projects of directed research and development proposed by the investigators which must be consistent with

the substantive priorities of research and development, approved in the long-term plan.

Framework criteria for financial support for both types of the Agency projects:

- projects of basic research shall be supported from the state budget at up to 100%, projects of applied research shall be supported from the state budget at up to 50%,
- projects of experimental development shall be supported from the state budget at up to 25%,
- in case the applicant for support for a project of applied research or a project of experimental development is a small, or a medium-sized enterprise, they can obtain increased funding from the state budget, in accordance with the criteria given under section 8.5.1,
- in the case of the projects of directed research and development, a subscriber of the results from the economic or social practice will have to be contractually provided.

8.5.1.5 Sectoral research and development projects

Framework rules for sectoral projects:

- Sectoral projects shall ensure the solution of the specific needs of the development of the sector;
- Sectoral projects must be in compliance with the substantive priorities of research and development, as set out in the Sectoral Concept of the Directions and Support for Research and Development to be developed by particular ministries or central authorities with a view to the long-term plan;
- The substantive priorities of research and development set out in the sectoral concept of the directions and support of research and development for the solution of sectoral projects must be different from the substantive priorities of research and development set out in the long-term plan,
- Ministries and other central authorities shall propose the topics for the publication of the competitive call for sectoral projects, with a proposal for their financial provision, under the coordination of the Ministry of Education;

- The Ministry of Education shall develop a special methodological guideline for the process of selection, solution and control of sectoral projects which will establish uniform rules for all ministries and other central authorities applicable to the solution of sectoral projects;
- Results of the solution of sectoral projects must be used in the social or economic practice.

Framework criteria for the financial support of sectoral projects:

- The public competitive call published for the solution of sectoral projects must be open to all organisations of research and development of the higher education sector, of the state sector, of the business sector and of the not-for-profit sector;
- A Ministry or a central authority must have committed resources for the support of sectoral projects in their respective chapters for the publication of the public competitive call;
- The duration of a sectoral project solution shall be maximum three years;
- A sectoral project shall have a contractually confirmed subscriber of its results;
- Alongside of the state budget resources, co-financing will need to be secured also from other sources (e.g. from business).

9. INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION

From membership of the Slovak Republic in the European Union a challenging task stems for science and technology in the area of international scientific and technological cooperation, which is to tackle the problems following for the Slovak research and development organisations out of the common European competitive environment – to be an equal competitive partner for the organisations in the other Member States. For Slovak organisations to be equal competitive partners they need to ensure qualified human resources, modern technical infrastructure and also adequate domestic financial sources whose co-participation

is required by the European Commission in the solutions of the EU programmes for research and development.

Equally the international scientific and technological cooperation following out of bilateral agreements on cooperation in science and technology, signed by the Government, and out of the SR membership in transnational research centres, is determined not only by the high-quality research and development infrastructure (human resources and technical infrastructure) but also by adequate resources in Slovakia that are required to support both the mobilities in case of bilateral cooperation and the research participation itself of Slovak organisations in the projects of bilateral cooperation and in the activities of transnational centres.

Inadequate funding from the state budget required for active participation on an equal footing of Slovak organisations of research and development, in all forms of international science and technology cooperation, is a major problem that has been persisting in the support of international scientific and technological cooperation on long term. The ever-increasing annual membership fees of Slovakia in international organisations, which from 1 January 2007, are covered by the Ministry of Education from its budget chapter (until 1 January 2007 these fees were covered by the Ministry of Foreign Affairs of the SR) and the mandatory 25% participation of national resources in the support of successful projects under FP 7, executed by the organisations of public sector, give rise to unbearable increases in the demands on the state budget resources and place the Ministry of Education before an uneasy task to identify the priorities in the area of international scientific and technological cooperation in accordance with the state budget resources available in its budget chapter.

The essential criterion identifying the priorities in the area of international science and technology cooperation will be the support for such participation of Slovak research and development organisations that would generate benefits primarily for the economic or societal development of the Slovak Republic.

Priorities in the area of international science and technology cooperation shall include:

- to reimburse from the budget chapter of the Ministry the annual membership fees in all international organisa-

- tions and European programmes and activities to which the Slovak Republic is a party,
- ensure funds in the budget chapter of the Ministry to carry out the research cooperation within the governmental bilateral and multilateral agreements signed of scientific and technological cooperation,
 - by 2015 raise the resources to ensure sustainable development of all specifications of groups of science and technology disciplines in Slovakia from the resources of FP 7 and FP 8 regardless of the substantive priorities of research and development, approved in Section 6.1 of the material,
 - contribute to the 25-percent financial participation of national resources required for the support of successful projects of FP7, executed by the organisations of public sector, from the budget chapter of the Ministry in proportion to the increase in expenditure in the relevant budgetary year,
 - create conditions in the Agency for the improvement of administrative and technical assistance in the preparation of projects seeking support under the Seventh Framework Programme,
 - cooperation with the countries that are of priority political interest for the Slovak Republic, in accordance with the objectives of the foreign policy of the Slovak Republic, in collaboration with the authorities and organisations of the EU and the NATO,
 - new memberships of Slovakia in the European organisations, centres, and activities will be considered and analysed to ascertain their economic and societal benefits for the development of Slovakia and the demands of their financial requirements for the support from the budget chapter of the Ministry.

With regard to the support for the projects of FP 7 and their potential support also from the Structural Funds, the main objective will be to develop such grant schemes that will allow simultaneous financial support of projects from the resources of FP 7 and from the Structural Funds.

10. EVALUATION OF RESEARCH AND DEVELOPMENT

The state science and technology policy must respond to the increasing significance of the evaluation of research and development in the countries of the EU. It must be emphasised that it is a demanding process, which must be undertaken continuously and at regular intervals. The evaluation process for research and development comprises complex and demanding activities that have to be conducted according to a uniform methodology. The basic principles of the evaluation must include a multi-criteria approach, a demonstrable professional competence, concreteness, transparency independence, and objectivity.

10. 1. The evaluation of the state of research and development

Based on the above, there will be an overall evaluation of research and development undertaken annually in the Slovak Republic according to the methodology developed by the Ministry of Education in working with other budget chapters, which shall set the criteria according to the indicators applied in the EU countries, making use of the evaluation of the research and development to be conducted by reputable world professional institutions.

Two basic kinds of indicators are used for the evaluation of research and development in the EU countries:

- a) individual indicators.
- b) compound indicators.

Evaluations undertaken by reputable world professional institutions are also used for the evaluation of research and development in the countries worldwide.

Individual indicators in the research and development are published in yearbooks of national statistical indicators, of Eurostat, the European Commission, OECD and some other world institutions, such as the World Economic Forum. Individual indicators can be categorized into:

- a) indicators for the evaluation of inputs – sources of research and development,
- b) indicators for the evaluation of the results of research and development and their impacts,
- c) indicators for the evaluation of the use of research and development.

Compound indicators are created by weighted aggregation of several individual indicators. They evaluate a certain multidimensional phenomenon in a comprehensive way using a single parameter (score) and permit to compare the level of different states in this area. The disadvantage is that the research and development is not the only factor determining the level of that area. Compound indicators can be categorised into:

- a) indicator of investments in knowledge,
- b) indicators of science and technology,
- c) indicators of innovation activity.

Particular countries of the world mutually compare the evaluations of research and development undertaken by reputable professional institutions and rank them as:

- a) Evaluation of competitiveness which is annually published by the World Economic Forum,
- b) Evaluation of competitiveness which is annually published, from 1989, by the Institute for Management Development, Monitor of business environment, a programme designed to describe and analyse the business process which is jointly coordinated by the Babson College, MA, USA and the London Business School, London, UK.

Both two types of basic indicators and the evaluation by reputable professional institutions are described in more detail in Annex 4.

The objective in the area of evaluation of research and development will be to put in place the evaluation of the state of research and development according to the above indicators. The execution of evaluation of research and development in Slovakia according to the indicators referred to above will allow to comprehensively compare the state of research and development with other countries of the world and identify the action necessary to improve the conditions of research and development in Slovakia.

10.2 Evaluation of the components of the research and development system

Besides the evaluation of the overall state of research and development a special attention will need to be devoted to the evaluation of partial processes and components of the research

and development system. It will be necessary to continue with annual evaluation of all kinds of designated support.

In order to ensure the requisite quality of research and development supported from the public sources it will be necessary to put in place a basic common framework for the evaluation of all Slovak research and development organisations.

Within the evaluation of all types of designated support provided from the public sources, substantive implementation will be annually evaluated of the state programmes of research and development, the state programmes of infrastructure development, the projects of research and development supported by the Agency, the sectoral research and development projects, the projects of structural funds and the Seventh Framework Programme. Of particular importance will be the evaluation of final results of the solution of the cited types of tasks of research and development. The Ministry of Education, in cooperation with the other budget chapters shall elaborate the methodology that will set the criteria and procedures for progress and final evaluation of the cited types of designated support, its substantive benefits for the economic and societal development of the country.

The research and development organisations that will receive funding from public sources will have to conduct their evaluation at 4-year intervals, with the participation of the Ministry's officials and other external experts. The basic framework of the evaluation of a research and development organisation will be specified in the methodology to be developed by the Ministry of Education in collaboration with the relevant experts. The basic evaluation framework will include the accreditation criteria of the research and development organisations. Further evaluation criteria will take into account the differences between institutions of particular research and development sectors, and therefore will be set as framework criteria, and it will be fully in the competence of particular sectors to decide what other criteria of evaluation they will establish that will take account of the specifics of their sector. The criteria of evaluation of the organisations of research and development will include not only the evaluation of research and development undertaken by them but also the evaluation of the effective use of public source funding, as well as the capacity

of the organisation to secure funds from the private sphere, based on the results achieved.

With a view to organisationally secure the process of the evaluation of the state of research and development in Slovakia according to internationally accepted indicators, and the process of the evaluation of the organisations of research and development, including the evaluation of universities and their research and development results, a centre for the evaluation and certification of research and development will be established. This centre will award the organisations of research and development certificates of competence to carry out activities in the area of research and development on the basis of the evaluation.

11. POPULARISATION OF SCIENCE AND TECHNOLOGY

Currently one of the key problems of science and technology – not only in Slovakia but in other countries of the EU as well, is the insufficient perception by the public of their significance as factors determining the economic and societal development of the country. Hence popularisation of science and technology that will secure the awareness of the significance by the public will be one of the key objectives of the state science and technology policy. It will also be necessary to systematically improve the perception of science and technology by the community, as one of the main building blocks to increase the standard of living of citizens and the general development of the society.

The strategic objectives in the popularisation of science and technology in the community will include:

increasing the understanding of the world of science and technology by the general public, improving the approaches to the clarification of objectives and results of research and development, overcoming the communication barriers between:

- research and development workers on the one side, and the representatives of the decision making sphere at national and regional levels, on the other,
- both sides referred to above and the broad public,
- research and development workers on the one side, and the representatives of the business sphere exploiting the results of research and development, on the other.

The specific objectives will include:

- raising the awareness of the public of the tasks of science and technology and the significance of applying their results in practical life,
- boosting the interest of young people in science and technology and in the scientific career and action in research and development by means of increased promotion of the results of secondary school and university students technical activity,
- improving the communication skills of research and development workers,
- increasing the prestige and the societal recognition of the vocation in research and development,
- encouraging participation of the public in the action in science and technology by means of a more intense dialogue.

Beside the financial support for popularisation granted to particular organisations of research and development through the Agency programme for the popularisation of science and technology, these objectives will, at national level, be implemented also by the establishment of the National Centre for the Popularisation of Science and Technology (hereinafter referred to as the “National Centre”, which was approved by the Resolution of the Government No. 103/2007 for the material titled the „Strategy of the popularisation of science and technology in the society”. The National Centre will be an integral part of the existing organisation directly managed by the Ministry – the Centre of Scientific and Technological Information, which is a contributory organisation, receiving a contribution allocated from the resources of the item Coordination of cross-cutting activities of the state science and technology policy of the National Programme for the Development of Science and Technology, in the budget chapter of the Ministry. The contribution provided by the Ministry of Education to the Centre of Scientific and Technological Information will include also the funding to ensure the activity of the National Centre; its existence shall not entail increased demands on the state budget because the material of the “Strategy of the popularisation of science and technology in the society“ was approved

by the Government of the Slovak Republic with a proviso that the objectives and tasks contained therein will not make additional demands on the state budget and will be implemented within the binding limits of the state budget chapter of the Ministry of Education of the SR for the year 2007 and the ensuing years. The National Centre will discharge important tasks of national character in the area of popularisation of science and technology, which the organisations of research and development cannot ensure themselves.

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Popularisation of science and technology will contribute to awareness raising of the significance of science and technology for the development of the economy and the society, with the aspect of a more positive perception of the occupation of the worker in a research and development organisation and a more positive perception of the need to increase spending from the state budget on science and technology.

12. MONITORING THE STATE SCIENCE AND TECHNOLOGY POLICY

In order to ensure conditions for a successful functioning of the science and technology system as a development factor not only at national level but at the European level as well, all objectives and goals of the “Long-term plan of the state science and technology policy by 2015” have to be continuously monitored and periodically reviewed and subsequently updated, thus enabling science and technology to continually fulfil its role in the period by 2015. For this reason it will be necessary to produce regularly the Annual Report on the implementation of the objectives and goals of the long-term plan, with a proposal for their updating.

***The Government's mid-term (2007-2013) science,
technology and innovation policy (STI) strategy [9]
(Budapest, March 2007)***

(Hungary)

The formation of a knowledge-based society and economy demands a high level of knowledge, which appears in new, marketable products and services. Science and innovation are essential factors in competitiveness and sustainable growth. At the same time, knowledge has become an important factor in quality of life.

Innovative Hungarian economy

The Hungarian economy and society must step into new fields of development based on knowledge and innovation in order that Hungary can with knowledgeintensive and innovative activities, giving to its products the greatest added value, become connected with the world economy. Sustainable development of the Hungarian economy can only be realized in an environment that stimulates innovation.

Strategic goals

The general goal of the strategy is that in the mid-term Hungary shall become a country where knowledge and innovation are the driving engines of the economy and companies appear on the global market with competitive products and services.

The mid-term goals:

- Expansion of companies' research and development activities
- Establishment of internationally recognized research & development-, innovation centres and research universities
- Enhancing of the regions' research & development & innovation (R&D&I) capacity
- Establishing a knowledge market which works on the principles of performance recognition and competition through the globalization of knowledge production and dissemination,
- Investment in large scientific facilities, primarily in the regional centres and the development poles, reducing regional differences (regional cohesion).

- The dynamic increase in yearly R&D expenditure, above all as a result of growth in corporate expenditure

Strategic principles

Principles of realizing the strategic goals:

- Focusing of intellectual and financial resources, optimization of utilization.
- Increased economic and societal implementation of R&D results.
- Strengthening of regional innovation.

Strategic priorities

The strategy designates tasks in the following priority areas:

- A culture of acceptance and utilization of scientific research results.
- Quality-, performance-, and utilization-driven efficient national innovation system.
- Well-honoured creative and innovative workforce suitable for the demands of knowledge-based economy and society.
- Economic and legal environment with incentives for creation and utilization of knowledge.
- Domestic companies, products and services that are competitive on the global market.

Connection with other strategic documents

The current strategy was prepared in harmony with the objectives of the National Development-policy Concept (NDC), National Action Program (NAP) and the New Hungary Development Plan (NHDP). The situation-analysis can be found in the Appendix. The details of implementation (operative goals, tasks and schedules) are described in the STI action plan.

The main documents adopted by the Visegrad Group countries in the field of innovative policy [6]

Country	Institutions	Normative and legal documents (laws / strategies)	Goals, objectives, priorities
1	2 - Ministry of National Education - Ministry of Economy - Ministry of Regional Development - Polish Academy of Sciences - National Agency for Research and Development	3 1. National Development Strategy 2007-2015 ²⁷	4 This document outlined the development goals for Poland while at the same time giving a realistic framework for the receipt and use of EU funds. On the basis of this strategy the second programme, <i>Guidelines for increasing economic innovativeness for 2007-2013</i> , was adopted.
Poland		2. Strategy for Innovation and Efficiency of the Economy: "Dynamic Poland 2020" ²⁸	Is the most important government strategy document devoted exclusively to the innovativeness of the Polish economy. It is to be implemented by the Ministry of Economy as one of nine integrated strategies, it has a mid (10 years) and long-term (20 years) scope, with horizontal strategies for the development of Poland. <i>Dynamic Poland 2020</i> aims at transforming Poland into a highly competitive economy (innovative and efficient) based on knowledge and co-operation. The way to achieve this was set out in four detailed goals focusing on: the adaptation of the regulatory and financial framework; the stimulation of knowledge and labour through efficiency; increased efficiency in the use of natural

²⁷ Innovation Policies in the Visegrad Countries [Электронный ресурс]. – Режим доступа: <http://ibs.org.pl/projekty/files/Visegrad/Publication.pdf>

²⁸ Strategy for Innovation and Efficiency of the Economy: "Dynamic Poland 2020". [Электронный ресурс]. – Режим доступа: <http://www.ebrd.com/downloads/country/strategy/poland.pdf>

	- Foundation for Polish Science		<p>resources and raw materials and the internationalisation of the Polish economy.</p> <p>The <i>National development strategy for 2020</i> forms a common basis for nine integrated strategies and focuses on three areas: the efficient state, competitive economy as well as social and territorial cohesion (KPRM, 2012). The quantitative goals reflect the EU 2020 strategy goals while the main index of reference is the ranking in the Innovation Union Scoreboard. Three auxiliary indicators were adopted: BERD, GERD and the share of students at technical and natural sciences faculties compared to the total number of students. It is planned to achieve the following by 2020: 1.7 of the GERD/GDP ratio (from 0.74 in 2010); 0.6-0.8 of the BERD/GDP ratio (from 0.2 in 2010) and 30% (from 26% in 2010) for the last target indicator.</p> <p><i>The Long-term National Development Strategy 2030: Third Wave of Modernity</i> is the third policy document covering the overarching strategic concept of the development of the country. It defines the main global and regional trends and sets the main long-term goals. It also sets several goals for 2030: GERD at 3% of GDP, an increase in the innovation performance index compared to the EU average towards 75% (from 54% in 2010) and others.</p>
	3. National Research Programme ²⁹		<p>Launched by the Ministry of Science and Higher Education aims at increasing the use of Polish science to raise the civilisation level</p>

²⁹ Бонковскі А. Інструменти підтримки інноваційності малих і середніх підприємств: досвід Польщі та Європейського Союзу / Александр Бонковскі, Міхал Клепка, Кшиштоф Матусяк, Єжи Стшелєц, Кшиштоф Засядли. – Познань-Київ, 2005. – 186 с.

			<p>of Poland. This is to be achieved by the plainer development of scientific results in education, the economy and culture.</p> <p>The main goal of the program was a holistic approach to interaction and cooperation that takes place between the institutions that affect innovation. The main subject of study within the framework of the National System of Innovation in Poland is the exchange of information and knowledge between the various actors in the field of R&D (Research and Development).</p> <p>Properties of this process can be described in several dimensions:</p> <ul style="list-style-type: none"> - exchange of knowledge in private sector; - exchange of knowledge between public and private sectors; - improving the innovation sector through purchase of innovative goods and services.
		<p>The main laws that control the activities of national innovative systems:</p> <ul style="list-style-type: none"> - The Law on Research organizations (research units are considered public entities marked with legal, organizational and economic-financial point of view, created for the purpose of scientific research and publications, the results of which should be used in certain areas of the state economy and social life); - The Law on Supporting of innovative activity; - The law on Activities of public organizations. 	
Slovakia	<ul style="list-style-type: none"> - Ministry of Education, Science, Research and Sport 	<p>1. Long-term Plan for the Science and Technology Policy of the Slovak Republic</p>	<p>The first three strategic documents have been devised by the Ministry of Education, Science, Research and Sport of the Slovak Republic. They were focused on research and development. These became the basic</p>

<ul style="list-style-type: none"> - Ministry of Economy - Ministry of Finance - Slovak Academy of Sciences 	<ul style="list-style-type: none"> by 2015. Bratislava ³⁰ 2. The implementation strategy for the Long-Term Plan of the State Science and Technology Policy for the period 2015 to 2020 3. Update of the Long-Term Plan of the National Science and Technology Policy for 2015 (Phoenix Strategy) 4. Minerva 1.0 (2005 - 2010) and Minerva 2.0 (2011 - 2015) ³¹ 	<p>documents for development of the Slovak R&D system for the period from 2015 up to 2020 and replaced the State Science and Technology Policy Concept for 2000-2005.</p> <p>On the one hand this new document takes into account the specific characteristics of domestic development, and on the other hand the objectives of the Lisbon Strategy regarding science and technology.</p>	<p>These strategies were coordinated by the Ministry of Finance. The Minerva 1.0 and 2.0 strategies could be considered as being at intermediate stages of policy preparation in Slovakia. Minerva 2.0 was a strategy which aimed to move the country into the</p>
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³⁰ Long-term Plan for the Science and Technology Policy of the Slovak Republic by 2015. Bratislava [Электронный ресурс]. – Режим доступа: https://www.vedatechnika.sk/SK/VedaATechnikaVSR/Certifikacia/Documents/Long_Term_Plan_by_the_year_2015.pdf

³¹ Innovation Policies in the Visegrad Countries [Электронный ресурс]. – Режим доступа: <http://ibs.org.pl/projekty/files/Visegrad/Publication.pdf>

			<p>“First division”. It contains a number of measures to link academics with the business sector at University science parks. However, they have not yet been fully implemented.</p>
		<p>5. Innovation Strategy of the Slovak Republic for 2007-2013³²</p>	<p>The strategic objective has been defined as follows: «Innovation has become one of the main tools for developing the knowledge economy and contributes to the high economic growth of the Slovak Republic with the aim of reaching the level of the most developed economies in the European Union.”</p> <p>The strategy has identified priority areas for intervention, such as:</p> <ul style="list-style-type: none"> - high-quality infrastructure; - an effective system for the development of innovation; - high quality of human resources; - effective tools for innovation. <p>The strategy quantifies that Slovakia will achieve the following:</p> <ul style="list-style-type: none"> - a positive trend in the development of innovative processes in the economy and society; - the successful implementation of projects; - innovations will contribute 25% to the growth in gross domestic product in the given year (presently the contribution is about 8%); - more than 5% of corporate innovation will have links to universities, the Slovak Academy of Sciences (SAS) or private research (currently the proportion of innovation from universities and the academic environment is less than 1%).

³² Innovation Strategy of the Slovak Republic for 2007-2013 [Электронный ресурс]. – Режим доступа: www.informatizacia.sk/ext_dok-national-strategic-reference.../5899c

		6. Smart Specialisation Strategy of the Slovak Republic ³³	Is defined as follows: “To drive structural change in the Slovak economy towards growth based on increasing innovation capability and R&D excellence to promote self-sustaining growth in income, employment and standard of living.” This document represents a consensus created with the participation of scientists, entrepreneurs, business clusters, regional government structures, civil society structures and advice from foreign European Commission experts. The existing network of implementation agencies will be transformed into two independent ones: - Research Agency and - Technological Agency.
Czech Republic	- Ministry of Education, Youth and Sports - Ministry of Industry and Trade	1. National Innovation Strategy (NIS) of the Czech Republic (2004) ³⁴	Represented a breakthrough compared to the traditional approach to innovation policy of the Czech Republic. It identified problems and outlined solution areas. Based on this analysis, it was concluded that the most persistent weaknesses of the CR in terms of the innovation system include the low focus of research efforts on excellence, the insufficient effectiveness of research activities, the low number of researchers and their low mobility, the under-usage of instruments to protect intellectual property, the fragmented public support for innovation and the limited use of research results in practice.

³³ Smart Specialisation Strategy of the Slovak Republic [Електронний ресурс]. – Режим доступу: <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/policy-document/slovenska-republika/smart-specialisation-strategy-slovak-republic-period-2014-2020>

³⁴ Národní inovační strategie České republiky. (National Innovation Strategy of the Czech Republic). Prague. [Електронний ресурс]. – Режим доступу: <http://www.msmt.cz/index.php?lang=2>

			<p>With regards to the application of new knowledge, the following barriers have been identified:</p> <ul style="list-style-type: none"> - low demand for domestic R&D results and the services of both domestic and foreign companies; - the lack of interaction and co-operation among the actors within the innovation system; - the non-existence or poor quality of services relating to knowledge transfer; - limited financial services focusing on innovative projects, and - the adverse tax and legislative environment for venture capital investments. <p>If NIS has laid the ideology of innovative development of the country, the NIP became the basis for practical implementation of measures to substantial improvement innovative activity.</p> <p>The document included an updated version of the National Innovation Strategy of the Czech Republic, which was prepared in 2011 as a joint document by the Ministry of Education, Youth and Sports, responsible for education and research, and the Ministry of Industry and Trade, in charge of industrial and innovation policy. It declared an intention to comprehensively tackle the afore-mentioned issues and to implement, as in other developed countries, a second and third generation innovation policy which</p>
		<p>2. National Innovation Policy of the Czech Republic for 2005-2010 (NIP)</p> <p>3. The International Competitiveness Strategy for the Czech Republic 2012-2020³⁵</p>	

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Back to the Top. The International Competitiveness Strategy for the Czech Republic 2012 – 2020. Prague. [Електронний ресурс]. – Режим доступу: http://www.mpo.cz/default_en.html

			<p>co-ordinates all the relevant policies and includes measures applied in different fields, i.e. in research, business, education as well as financial policy, especially taxation.</p>
		<p>4. The Czech National Policy for Research, Development and Innovations for the period from 2009-2015³⁶</p>	<p>It contained priorities in various areas including proposed measures with responsible bodies and the timeframe. In 2013 this policy document was updated to reflect new developments, especially the new European Union strategy initiatives (EU 2020 Strategy, Innovation Union), the impact of the financial crisis (especially on public finances), as well as relevant up-to-date national strategy papers and the recommendations of the international audit by the Czech RTDI system. In line with the EU 2020 strategy it also contains an outlook for 2020.</p> <p>The main goal of the updated policy is to provide high-quality conditions for creating new knowledge and its application to innovations in the business sector. It covers the relevant strategy documents of the Czech Republic and identifies several major goals:</p> <ol style="list-style-type: none"> 1. Ensuring a research environment that produces internationally competitive results both in terms of quantity and quality by ensuring appropriate human resources are available for RTDI activities, developing an adequate and productive research infrastructure, increasing financial support from the state budget, enhancing the

³⁶ Národní politika VaVal v ČR na léta 2009 až 2015 s výhledem do roku 2020. (The National Policy of Research, Development and Innovations for the period 2009-2015 with an outlook to 2020). Prague. [Электронный ресурс]. – Режим доступа: http://www.vyzkum.cz/storage/att/316EDE80438A49F64BF884897F06F6C1/Narodni%20politika%20vyzkumu%20vyvoje%20a%20inovaci%20CR%20na%20leta%202009_2015.pdf

			<p>effectiveness of the public financing of RTDI activities, increasing the openness of research performers and improving international co-operation.</p> <ol style="list-style-type: none"> 2. Increasing co-operation between public research, businesses and public administration to ensure effective knowledge diffusion and exploitation. 3. Increasing the innovation potential of the business sector, which will contribute to the competitiveness of the Czech economy by developing services for innovative enterprises, supporting innovation in enterprises and stimulating foreign investments in strategic research and innovation activities in the Czech Republic. 4. Developing a stable, effective and strategically managed national innovation system by increasing the efficiency of co-ordination within the policy governance sub-system and improving policy-making capacities, strengthening the strategic approach to the design and implementation of the STI policy, and enhancing the active participation of the Czech Republic in shaping the European Research Area.
			<p>As for the normative and legal provision of innovative activity at a national level, in addition to the mentioned National Innovation Strategy of the Czech Republic, in January 2005 the Government of the Czech Republic was approved conceptual document «National Research and Development Policy of the Czech Republic». Czech Ministry of Education prepared a document entitled «Approaches of the CR to EU material «Investing in research: action plan for Europe»; Ministry of Industry and Trade, together with its subordinate agency «Czechinvest» – the document entitled «The concept of innovation in the field of industry and business».</p>

		<p>A key role in supporting of innovations plays approved by the Czech Government «National Development Plan for the period 2007-2013». There is also a law No. 130/2002 Compendium of laws «On supporting research and development with public funds».</p>	<p>The current STI policy pinpoints the main features of the international environment; offers an overview of the Hungarian STI performance; highlights the strengths and weaknesses based on the 2011 Innovation Union Scoreboard indicators, discusses strategic options, presents a vision and sets quantitative STI policy goals. Three main problem areas have been identified:</p> <ul style="list-style-type: none"> - the weakness of the knowledge bases and knowledge production; - shortcomings in knowledge flow as well as knowledge and technology transfer; and obstacles to the (innovative) functioning of the business and community sectors involved in knowledge utilisation. <p>Accordingly, the document recommends three priority axes:</p> <ol style="list-style-type: none"> 1. Internationally competitive knowledge bases which can underpin economic and social progress. 2. Promoting co-operation in knowledge and technology transfer which is efficient both at national and international level, and
Hungary	<p>- Ministry for National Economy</p>	<p>1. National Research and Development and Innovation Strategy (2013-2020)³⁷</p>	

³⁷ National Research and Development and Innovation Strategy (2013-2020) [Электронный ресурс]. – Режим доступа: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/hu/highlights/highlight_0012

		<p>3. Innovative enterprises intensively utilising the results of modern science and technology, also in the public sector: The overall vision is formulated as follows: "By 2020 the key participants in the national innovation system will be significantly reinforced by the active support of the RDI policy and will become equal partners in the global innovation processes in Hungary. They will then be able to invigorate the national innovation system as a whole, due to the follow-through effects, and thus contribute significantly to enhancing the competitiveness of the Hungarian economy, and also transform it into a sustainable knowledge economy." (p. 28) It is also expressed in quantified objectives: "Hungary will increase its gross domestic expenditure in R&D to 1.8% by 2020, and to 3% by 2030."</p>	<p>Science and innovations are important factors in competitiveness and sustainable growth. At the same time knowledge became an important factor in quality of life.</p> <p>Strategic goals:</p> <ul style="list-style-type: none"> - The overall strategy goal provides that in the medium term perspective Hungary will become a country where knowledge and innovations are the driving engines of the economy, and companies appear on world markets with competitive products and services.
	<p>2. The Government's mid-term (2007-2013) science, technology and innovation policy (STI) strategy.³⁸</p>		

³⁸ The Government's mid-term (2007-2013) science, technology and innovation policy (STI) strategy. [Електронний ресурс]. – Режим доступу: <http://nkfih.gov.hu/english/strategic-documents/the-government-mid-term-090619>

			<p>Mid-term objectives:</p> <ul style="list-style-type: none"> - Expansion of research and development and experimental design activities of companies; - Creation of internationally recognized innovation centers and research universities; - Creation of strong knowledge market to work for the recognition of the principles of productivity and competition through globalization of production and the transfer of knowledge; - Investment in large scientific institutions, primarily in regional centers, reduction of regional disparities; <p>The most important goals of research and innovative strategy:</p> <ul style="list-style-type: none"> - Improving the competitiveness of the country; - Creating jobs with high added value; - Focusing of intellectual and financial resources, optimizing their use; - Expansion of intellectual capacity.
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List of recommended literature

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2. Agreement for scientific and technological co-operation between the European Community and Ukraine [E-resource] – Access mode: <http://ukraine-eu.mfa.gov.ua/en/ukraine-eu/sectoral-dialogue/science>
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4. Flagship initiative under the Europe 2020 Strategy, Brussels, 26.1.2011 [E-resource] – Access mode: <http://ec.europa.eu/resource-efficient-europe/>
5. Horizon 2020 [E-resource] – Access mode: <https://ec.europa.eu/programmes/horizon2020/h2020-sections>
6. Horizon 2020 – the Framework Programme for Research and Innovation, Brussels, 30.11.2011 [E-resource] – Access mode: <https://ec.europa.eu/programmes/horizon2020/en/official-documents>
7. Innovation Policies in the Visegrad Countries [E-resource] – Access mode: <http://ibs.org.pl/projekty/files/Visegrad/Publication.pdf>
8. Long-Term Plan of the State Science And Technology Policy by the year 2015 [E-resource] – Access mode: https://www.vedatechnika.sk/SK/VedaATechnikaVSR/Certifikacia/Documents/Long_Term_Plan_by_the_year_2015.pdf
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10. Národní politika VaVaI v ČR na léta 2009 až 2015 s výhledem do roku 2020. (The National Policy of Research, Development and Innovations for the period 2009-2015 with an outlook to 2020). Prague. [E-resource] – Access mode: http://www.vyzkum.cz/storage/att/316EDE80438A49F64BF884897F06F6C1/Narodni%20politika%20vyzkumu%20vyvoje%20a%20inovaci%20CR%20na%20leta%202009_2015.pdf

11. Národní inovační strategie České republiky. (National Innovation Strategy of the Czech Republic). Prague [E-resource] – Access mode: <http://www.msmt.cz/index.php?lang=2>
12. Report on implementation of the Association Agenda and the Association Agreement between the European Union and Ukraine January – October 2015 [E-resource] – Access mode: [http://www.kmu.gov.ua/document/248710258/9m_AA+AAg%20GOEI%20REPORT%20January-October%202015%20\(ENG\)_full%20%20report_FINAL.pdf](http://www.kmu.gov.ua/document/248710258/9m_AA+AAg%20GOEI%20REPORT%20January-October%202015%20(ENG)_full%20%20report_FINAL.pdf)
13. Smart Specialisation Strategy of the Slovak Republic [E-resource] – Access mode: <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/policy-document/slovenska-republika/smart-specialisation-strategy-slovak-republic-period-2014-2020>
14. Strategy for Innovation and Efficiency of the Economy: “Dynamic Poland 2020” [E-resource] – Access mode: <http://www.ebrd.com/downloads/country/strategy/poland.pdf>
15. The Government’s mid-term (2007-2013) science, technology and innovation policy (STI) strategy, Budapest, March 2007 [E-resource] – Access mode: <http://nkfih.gov.hu/english/strategic-documents/the-government-mid-term-090619>

PART 3

CONCEPTUAL BASIS OF INNOVATIVE ACTIVITY IN UKRAINE

Constitution of Ukraine³⁹

(Abstract)

Title II. Human and Citizen Rights, Freedoms, and Duties

Article 53. Everyone shall have the right to education.

Complete general secondary education shall be compulsory.

The State shall ensure accessible and free pre-school, complete general secondary, vocational and higher education at the state and communal educational establishments; the development of pre-school, complete general secondary, extra-curricular, vocational, higher and post-graduate education, various forms of study; the provision of state scholarships and privileges to pupils and students.

Citizens shall have the right to obtain free higher education at the state and communal educational establishments on a competitive basis.

Citizens belonging to national minorities shall be guaranteed, in accordance with law, the right to education in their native language, or to study their native language at the state and communal educational establishments or through national cultural societies.

Article 54. Citizens shall be guaranteed the freedom of literary, artistic, scientific, and technical creative activities, protection

³⁹ Constitution of Ukraine - Official translation [E-resource] – Access mode: http://www.kmu.gov.ua/document/110977042/Constitution_eng.doc

of intellectual property, their copyright, moral and material interests arising in connection with various types of intellectual activity.

Every citizen shall have the right to the product of his intellectual, creative activity; no one shall use or distribute them without his consent, except for the cases established by law.

The State shall promote the development of science and the establishment of scientific relations of Ukraine with the world community.

Cultural heritage shall be protected by law.

The State shall ensure the preservation of historical monuments and other objects of cultural value, and take measures to return to Ukraine the cultural treasures of the nation located beyond its borders.

Title VI. The Cabinet of Ministers of Ukraine. Other Executive authorities.

Article 116. The Cabinet of Ministers of Ukraine shall:

1) ensure the state sovereignty and economic independence of Ukraine, the implementation of domestic and foreign policy of the State, and the execution of the Constitution, laws of Ukraine, and acts of the President of Ukraine;

2) take measures to ensure human and citizen rights and freedoms;

3) ensure the implementation of financial, pricing, investment, and taxation policy; the policy in the areas of labour and employment, social security, education, science and culture, environmental protection, ecological safety, and exploitation of natural resources;

4) develop and implement national programmes of economic, scientific and technical, social and cultural development of Ukraine;

5) ensure equal conditions of development of all forms of ownership; effect management of the state property in accordance with law;

6) elaborate a draft law on the State Budget of Ukraine, ensure the implementation of the State Budget of Ukraine approved by the Verkhovna Rada of Ukraine, and submit a report on its implementation to the Verkhovna Rada of Ukraine;

7) take measures to ensure the defence potential and national security of Ukraine, public order, and fight against crime;

8) organise and ensure realization of foreign economic activity of Ukraine and the customs practice;

9) direct and co-ordinate the work of ministries and other executive authorities;

9-1) form, reorganise, and liquidate in compliance with law, Ministries and other central executive authorities, acting within the limits of funds allocated to the maintenance of executive authorities;

9-2) appoint to and remove from the office chief officers of central executive authorities not included in the Cabinet of Ministers of Ukraine, upon the submission of proposal by the Prime Minister of Ukraine;

10) exercise other powers determined by the Constitution and laws of Ukraine.

Concept of reforming the state policy in innovation sector [2]

The purpose of of this concept is to improve fundamentals of state regulation in innovative sphere, development of economic, structural and organizational bases for innovative development, ensuring interaction of various institutions during implementation of innovations, creating a system of state support for innovative development of national economy, creation of modern market for innovations and technology, determination of mechanism for rapid response to changes in the innovation sphere.

The adoption of the Concept is because in recent years there is a significant backlog of national economy from the economy of developed countries in the world in terms of technological development and productivity. Most enterprises are technologically backward, energy-intensive and do not carry out innovative activities.

The results of research of innovative sphere indicate a lack of consistent and systematic approach to its development, low efficiency of mechanism for stimulating business entities to proceeding innovative activity.

Imperfection in the system of state regulation in the sphere of innovations leads to lower rates of innovative development, high-capacity resources of national economy, low quality of products and services, noncompetitiveness of domestic enterprises and inefficient use of funds, including state and local budgets allocated for activities in innovation area.

Implementation of the Concept envisages:

- improvement of legislation in the sphere of innovations to create conditions for implementation of innovations, formation of innovative culture, improving statistical methods for assessing the state of innovative activities implementation;
- identifying and implementing a mechanism of state support for proceedings of innovative activities, implementation of priority innovative projects taking into account international experience;
- determining the mechanism of coordination of investment and innovative public policy for the use of national scientific and technological capabilities in the process of technological modernization of national economy;
- improvement of national system for technical regulations, patent and licensing activity of budget scientific research institutions;
- determining the mechanism of public-private partnership in the field of innovation and commercialization of scientific and technological developments and inventions;
- to ensure the development of innovative infrastructure and innovative activities at regional level;
- stimulate domestic enterprises to focus its own funds for conducting applied scientific researches and experimental developments.

Ways and methods of solving the problem

Reforming the system of state regulation in the sphere of innovations, carried out in the following directions:

- determining tasks and functions of the executive and local authorities in the innovation sphere;
- reforming the system of state orders for scientific research and development works;

- creation of favorable conditions to enhance innovative activity, implementation of innovations, operation of innovative infrastructure, market of innovations and technologies;
- introduction of scientific research results, inventions and technologies, ensuring the rights of intellectual property;
- forming of innovative culture;

Expected results

Implementation of the Concept will contribute:

- improve the effectiveness of state innovative policy implementation;
- reforming the system of state regulation in the sphere of innovations;
- increase the competitiveness of national economy;
- creation of market for innovations and technologies;
- ensure the realization of scientific potential.

Concept of national innovative system development [3]

According to this Concept of national innovative system development, national innovative system is a combination of legislative, structural and functional components (institutions) involved in the creation and application of scientific knowledge and technology and define legal, economic, organizational and social conditions to ensure innovative process.

National innovative system includes subsystems:

- 1) state regulation, consisting of legislative, structural and functional institutions that establish and ensure compliance with rules, regulations, requirements in innovative sphere and interaction of all subsystems of national innovative system;
- 2) education, consisting of higher education institutions, scientific-methodological and methodical institutions, scientific and industrial enterprises, state and local education authorities and education institutions conducting training, retraining and advanced training;

- 3) knowledge generation, consisting of scientific institutions and organizations regardless of ownership, conducting research and development and create new scientific knowledge and technologies, public research centers, academic and branch institutes, research departments of higher education institutions, research and design departments of enterprises;
- 4) innovative infrastructure, consisting of production-technological, financial, information-analytical and expert consulting component, as well as technopolises, technological, industrial and science parks, innovative centers and technology transfer centers, business incubators and innovative institutions of other types; information networks of scientific and technical information, expert consultancy and engineering firms, public and private institutional investors;
- 5) production, composed of organizations and enterprises that produce innovative products and provide services and (or) are consumers of technological innovation.

The purpose for development of national innovative system is creating conditions for increasing labour productivity and competitiveness of domestic commodity producers through technological modernization of national economy and raising their innovative activity, production of innovative products, use of advanced technologies, methods of organization and economic management to improve human well-being and ensure sustainable economic growth.

Development directions of National Innovative System

The main tasks for the development of national innovative system are: towards the creation of competitive domestic sector of scientific research and developments and ensure its enlarged reproduction

- Providing innovative orientation of educational system;
- Improving efficiency of domestic sector of scientific research and developments in order to strengthen its role in providing innovative development of national economy;
- Providing extended reproduction of knowledge through integration of higher education institutions, academic and industrial scientific institutions;

- Ensuring the development of financial and credit support for implementation of competitive scientific and technical and innovative programs and projects;
- Ensuring the development of industrial and technological innovative infrastructure;
- Ensuring the development of effective information-analytical and expert consulting infrastructure of innovative activity;
- Creating conditions for technology transfer and improved efficiency of intellectual property rights protection;
- Implementation in accordance with EU and WTO transparent and effective mechanism of incentives and state support for proceedings of science, technology and innovative entities;
- Implementation of effective mechanism for public-private partnership aimed at achieving a high level of competitiveness of domestic products in the world market in some sectors of high-tech industry primarily through introduction of domestic technologies;
- Providing support and protect of domestic producers;
- Creating a positive attitude to innovations in society;
- Development of human capacity in the field of innovative activity.

Concept of scientific, technological and innovative development of Ukraine [4]

This document contains main objectives, indicates priorities and principles of state science and technology policy, mechanisms for accelerated innovative development, guidelines for structural formation of scientific and technological potential and its resource support.

Based on relevance of available problems in Ukraine, whose solution requires research providing, the most priority directions of state support should be:

in scientific development sphere:

- fundamental science, especially, developing of national research teams that have international recognition;
- applied researches and technologies, where Ukraine has considerable scientific, technological and industrial potential and are able to provide the output of domestic products on the world market;
- higher education, training of scientific and research and educational staff of the priority directions for scientific and technological development;
- development of scientific foundations for building a socially oriented market economy;
- scientific support in solving problem of human health and environmental safety;
- system of informational and logistical support for scientific research;

in technological development sphere:

- research and creation of conditions for effective work and modern everyday life of human;
- development of means for preservation and protection of human health, providing the population with medical equipment, medicines, means of prevention and treatment;
- development of resource and energy saving technologies;
- development of modern technologies and equipment for electric power, processing branches of production, especially, agriculture, light and food industries;

in production sphere:

- formation of knowledge-intensive production processes, facilitating the creation and functioning of innovative structures (technology parks, incubators, etc.);
- creation of competitive processing industries;
- technological and technical renovation of basic sectors of economy of the state;
- introduction of highly profitable innovative investment projects whose implementation can provide prompt returns and initiate progressive changes in the structure of production and trends of its development.

Approval of national priorities for science and technology development performed according to the legislation. The main mechanism for implementing the priority areas should be national and sectoral scientific and science and technology programs.

National Strategy of Education Development in Ukraine for the period up to 2021 [5, 8]

The document has been elaborated to improve the legal and institutional framework of education development in Ukraine. To development of strategy there joined almost all educational teams, the public, from which received almost 6,000 proposals, comments, requests that have been analyzed and taken into account in the draft of the National Strategy of Education Development. The document was reviewed and approved at the Third All-Ukrainian Congress of Educators last year.

The National Strategy of Education Development determines the main areas, priorities, objectives and tools for implementing state policy in the field of education, personnel and social policy, as well as is the basis for amending the current legislation of Ukraine, governance and funding the pattern and essence of education.

The main objective of the Strategy is to ensure the availability of high quality, competitive education for Ukrainian citizens in accordance with the requirements of innovative, sustainable and democratic development of society, economy, science and culture. Changes in education should provide conditions for personal development according to one's own individual inclinations, abilities, training needs throughout life.

The goal of the National Strategy is:

- increase of availability of qualitative, competitive education in accordance with the requirements of innovative sustainable development of society and economy;
- provision of personal human development according to his individual abilities and needs on the basis of lifelong education.
- strategic directions of education development

The development strategy of the national education system should be formed adequately to advanced integration and globalization processes, the requirements of the transition to post-industrial civilization that will provide stable movement and development of Ukraine in the first quarter of the XXI century, the integration of the national education system in the European and world educational area.

The strategic directions of the state policy in education should be:

- reforming the education system which is based on the principle of human priority;
- update according to the time requirements the regulatory framework of education system;
- modernization of the structure, content and organization of education on the basis of competence-based approach;
- creation and provision of opportunities for different educational models, creation of educational institutions of various types and forms of ownership;
- development of an effective system of national education, development and socialization of children and youth;
- provision of availability and continuity of education throughout life;
- creation of safe learning environment, ecologization of education;
- development of research and innovation in education, improving the quality of education on the basis of innovation;
- informatization of education, improvement of library and information resources for education and science;
- provision with national monitoring system of education;
- improving the social status of pedagogical and scientific-pedagogical staff;
- creation of a modern logistics system of education.

The main objectives of the National Strategy

Modernization and development of education should acquire advanced and continuous nature; flexibly respond to all processes in Ukraine and abroad. Improving the quality of education should be aimed at promotion of economic growth in state

and solution social problems, further training and personal development. Qualitative education is essential for provision of stable democratic development of society.

The efforts of education authorities, scientific and methodological support services for support of the entire society and the state should be focused on implementing the strategic directions of education development, coping with these problems and performance of future challenges including:

- update of goals and content of education on the basis of competency approach and personal orientation, taking into account international experience and the principles of stable development;
- ensuring economic and social guarantees for realization of the constitutional right for education of every citizen of Ukraine, regardless of place of residence and forms of education;
- restructuring the educational process on the basis of developmental pedagogy aimed at early detection and the most complete disclosure of potential (skills) among children according to their age and psychological characteristics;
- provision of development and functioning of Ukrainian language as a state language and satisfaction of language-educational needs of ethnic minorities and promoting study of foreign languages;
- development of an effective system of national education on the basis of universal, multicultural, civil values; provision of physical, moral, spiritual and cultural development of the child, formation of socially responsible creative person, a citizen of Ukraine and the world; preparation of young people to make conscious choice in life spheres;
- provision of the systematic quality improvement of education based on innovative, contemporary psycho-pedagogical and scientific-methodical maintenance of educational process;
- strengthening the language, informational, environmental, economic and legal training of pupils and students;
- creation of safe learning environment;/li>

- provision of operating effective system of inclusion education;
- improvement of training, retraining and advanced training systems of pedagogical and administrating personnel of education, improvement of their management culture;
- increase the responsibility of family for education and upbringing of children;
- provision with economic and social guarantees of pedagogical, scientific-pedagogical, library and other workers of educational system, increase of their social status, prestige of pedagogical profession and promotion of professional development and creativity;
- establishment of modern material and technical base for the educational system;
- provision of conditions for development of modern educational facilities (teaching, electronic, technical, information and communication , etc.);
- development of cooperation between the education department and local authorities of educational institutions, providing an objective evaluation of quality of education;
- develop an effective mechanism to ensure financial and economic education, adequate remuneration for pedagogical and teaching staff.

In order to realize stable development and new qualitative breakthrough in the national education system it is necessary to provide:

in higher education:

- making the network of higher education institutions and systems of higher education in line with the needs of national economic development and labor market demand;
- creation of research universities, expanding the autonomy of higher education institutions;
- reviewing and approving new list of occupations pedagogical and teaching staff;
- develop standards for higher education, competency-oriented approach accorded with the new structure of educational qualification (education and research) levels of

higher education and the National Qualifications Framework;

- increased interaction of higher education institutions of the National Academy of Sciences of Ukraine and National Academy of Pedagogical Sciences of Ukraine for the development of research in the field of higher education;
- involvement of employers in cooperation with universities, in particular, to participate in the development of higher education, organizing practical training of students, addressing issues of the first graduates of the workplace;
- further improvement of procedures and techniques of standardized external testing of educational achievements of graduates in general secondary education who wish to enroll in higher education institutions as a prerequisite for ensuring equal access to higher education;
- upgrading of educational, scientific and technical, material and technical base of higher education.

In challenging demographic and socio-economic conditions there should be performed the updating of educational institutions network with the purpose of more efficient use of their material and technical, personnel, financial and managerial resources to ensure access to and quality of education.

The development of the National Strategy is due to the need of radical changes aimed at improving the quality and competitiveness of education in new economic and cultural conditions, speed up Ukraine's integration to international educational area.

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7. Constitution of Ukraine - Official translation [E-resource] - Access mode: http://www.kmu.gov.ua/document/110977042/Constitution_eng.doc
8. National Strategy of Education Development in Ukraine for the period up to 2021 [E-resource] - Access mode: <http://nmu.edu.ua/eng/strategy.php>

PART 4

REGULATORY FRAMEWORK OF INNOVATIVE ACTIVITY IN HIGHER EDUCATION INSTITUTIONS

Law of Ukraine “On Higher Education” [1]

The Law establishes the main legal, organizational, and financial functioning principles of the higher education system, creates conditions to increase cooperation of state authorities and business with higher educational institutions based on the principles of autonomy of higher educational institution, combination of education with research and production in order to prepare competitive human capital assets for high-technology and innovation development of the country, personal self-actualization, and providing for the demand of the society, labor market and the state for qualified specialists.

The Act sets out the principles on which the State’s policy on higher education is based:

- Promoting the sustainable development of society by producing competitive human capital and creating the conditions for life-long learning
- Ensuring access to higher education
- Independence of higher education from political parties and civil or religious organizations
- Integration into the European Higher Education Area and wider international integration
- Government support for research and innovation, including preferential financial treatment of universities engaged in research

- Supporting graduates to access and enter work and providing incentives for employers to provide graduates with their first employment destination
- Fostering the development of higher education institutions as centres of independent thought

Key provisions are:

Defining the levels, degrees and qualifications of higher education, related to a National Qualifications Framework. Certification awarded to graduates will include a Diploma Supplement produced according to European standards.

Establishing Higher Education Activity Standards setting out minimum requirements for staffing, courseware, physical infrastructure, information resources. Standards will specify the number of ECTS credits required for the degree; graduates' competencies; learning outcomes; and entry requirements. These apply to all public, private and research institutions.

Management of the higher education sector: the functions of the Ministry of Education and Science will be primarily concerned with setting and implementing national strategy and frameworks rather than the day-to-day operations of HEIs.

Quality Assurance: establishing a dual system of internal and external quality assurance HEIs will be responsible for quality assurance within the institution while external quality assurance which will be managed by a new National Quality Assurance Agency for Higher Education. The NQAA will assure the effectiveness of HEIs' processes and procedures; ensure publically available criteria for decision-making in line with standards and guidelines recognized for the European Higher Education Area.

Higher Education Institutions will be autonomous and self-governing, managing their academic and day to day operations. As well as research, teaching and developing students' abilities, HEIs should build human capital to ensure Ukraine's social and economic development, spread knowledge among the population and build international co-operation.

Heads of HEIs will manage all aspects of the HEI - financial and business operations; structure and staffing; performance; the healthy lifestyle of students; and ensuring open and effective

public monitoring of the HEI. Heads will be accountable for their institution's education, research and innovation activities, as well as financial and business performance. Heads will be elected for a 5-year period by secret ballot. Those eligible to vote are all members of the teaching, academic and research staff, representatives of other staff members, elected representatives of students.

Democratic and collegial governing structures will be established in all HEIs (Academic Council, Supervisory Board, working and advisory bodies and a General Assembly).

Students are given participation in the management of HEIs at a number of levels.

Scientific research and development and innovation activity at HEIs: the law sets out the aim of making more effective use of resources in the development and implementation of priority research programmes through integration of HEIs and the national academies of science. A main area is ensuring that young researchers, graduate students and doctoral candidates in HEIs are directly involved in the research of academies.

Article 30 of the Law envisages that a national higher educational institution that provides for breakthrough development of the state in certain spheres of knowledge using a model that combines education, science and innovation, contributes to integration of the state into the global education and academic space, and has recognized scientific achievements, can be granted a research university status. A research university status is granted to a higher educational institution by the Cabinet of Ministers of Ukraine, on a competitive basis, for a term of 7 years, according to the Provision on Research University approved by the Cabinet of Ministers of Ukraine, and the criteria that include parameters adjusted to the number of academic teaching and academic staff of the higher educational institution. A higher educational institution is granted research status by proposal of the National Agency for Higher Education Quality Assurance, subject to conformance to the criteria established by the Cabinet of Ministers of Ukraine. Conformance of the higher educational research institution's activity to the established criteria to confirm or withdraw such status is checked once per 7 years by the National Agency for Higher Education Quality Assurance.

The activity of a higher educational institution is carried out based on the principles of:

- autonomy and self-government;
- separation of rights, authority, and liability of the founder (founders), state authorities, and bodies of local self-government whose sphere of management includes the higher educational institution, management bodies of the higher educational institution, and its organizational units;
- combination of collegial and single management principles;
- independence of political parties, civil and religious organizations (except for higher ecclesiastical educational institutions).
- Higher educational institutions have equal rights that constitute their autonomy and self-government, including the rights to:
 - develop and implement education (academic) programs within their licensed specialty;
 - independently determine forms of education and forms of education process organization;
 - choose types of bachelor and master training programs provided for by the International Standard Classification of Education;
 - hire teaching, academic, academic teaching, and other staff;
 - create and approve its own staffing plan;
 - make the final decision to recognize (determine the equivalence) of the bachelor, master, doctor of philosophy, doctor of sciences degrees, as well as associated professor and professor titles, acquired in foreign educational institutions, when enrolling the holders of such degrees or titles for education and/or hiring them to academic or academic teaching positions;
 - implement a rating-based assessment of educational, research, and innovation achievements of the participants of the education process;
 - provide additional educational and other services according to the legislation;

- independently develop and approve own programs for education, scientific, research and technical, and innovation activity;
- independently institute specializations, determine their scope and education discipline programs;
- award higher education degrees to higher education students who, according to the legislation, successfully pass the attestation procedure after completing their education at the appropriate higher education level;
- make the final decision on awarding of academic degrees by accredited specialized academic councils;
- create secondary educational institutions by approval with bodies of local self-government;
- create, reorganize, and liquidate its organizational units;
- conduct publishing activity, namely, publish textbooks, study guides and treatises, and develop its own printing base;
- on the basis of appropriate agreements, conduct joint activity with educational institutions, academic institutions, and other legal entities;
- locate its educational, research, and educational, research and production units in companies, institutions, and organizations;
- take part in the work of international organizations;
- establish own forms of moral and material incentives for participants of the education process;
- address initiatives to authorities that conduct management in the sphere of higher education, for amendment of effective normative legal acts in the sphere of higher education, or for drafting of new ones, and participate in the drafting;
- carry out business and other activity according to the legislation and the statute of the higher educational institution;
- manage its own revenues (for state-owned and municipal-owned higher educational institutions), in particular, those received from provision of paid services;
- open current and savings accounts in banks;
- exercise other rights that do not contradict the legislation.

Higher educational institutions shall:

- take measures, including by implementing appropriate modern technologies, to prevent and detect academic plagiarism in treatises of academic, academic teaching, teaching, and other staff and students of higher education, and bring them to disciplinary liability;
- have an internal system for educational activity and higher education quality assurance;
- create the necessary conditions to enable persons with special educational needs to pursue higher education;
- publish information about the exercise of their rights and fulfillment of their obligations on their official website, information stands, and by any other means.

Chapter XI of the Law is dedicated to academic, research, and innovation activity in higher educational institutions.

The material technical resources and the legal status of property of higher educational institutions are determined by Article 70 of the Law. A higher educational institution, according to the procedure determined by law, and according to its statute, has the right:

- of property to intellectual property objects created at its own expense or at the expense of the state or local budgets (except in cases determined by law);
- to create a sustainable fund (endowment) of the higher educational institution and utilize the revenues from its use according to the sustainable fund functioning conditions, and to receive property, resources and material valuables, in particular, buildings, structures, equipment, and vehicles from state authorities, bodies of local self-government, legal entities and natural persons, including in the form of charity;
- to conduct business activity in Ukraine and abroad;
- to use property held by it on the right of operational control, including for business activity, and to grant lease and usage rights to such property according to the legislation;
- to create its own material technical resource bases, or to use them under an agreement, in order to conduct educational, academic, innovation, or business activity;

- to create and develop its own base of social and household facilities, and a network of sports and recreational, treatment and prophylactic, and art and cultural organizational units;
- to carry out capital construction, reconstruction, capital and current repairs of fixed assets;
- to direct funds to social support of academic teaching, academic, teaching, and other staff of higher educational institutions, and of persons attending higher educational institutions;
- to open current and savings accounts in the national and foreign currencies according to the legislation, use bank loans without regard to the restriction for borrowing set by Article 16 and Article 116, part 1, paragraph 27 of the Budget Code of Ukraine;
- to take part in formation of the statutory capital of innovation structures, and small businesses created with participation of higher educational institutions that develop and implement innovative products, by contributing intangible assets (property rights to intellectual property objects);
- to found educational institutions and academic institutions;
- to found companies for innovation and/or production operations;
- to transfer contributions in a foreign currency for collective membership in international education and academic associations, as subscription fee for foreign academic publications, and for access to global information networks and databases;
- to take part in formation of the statutory capital of innovation structures of different types (science parks, technology parks, business incubators, etc.).

The Law also introduces appropriate amendments to the Land Code of Ukraine and Laws of Ukraine “On Education”, “On the Power Sector” and “On Scientific and Technical Research Activity”.

Law of Ukraine
“On innovation activity” [2]

The Law defines legal, economic and organizational principles of state regulation of innovation activity in Ukraine.

The objects of innovation activity are:

- innovation programs and projects;
- new knowledge and intellectual products;
- production equipment and processes;
- infrastructure of production and entrepreneurship;
- organizational technical decisions of production, administrative, commercial or other nature, which significantly improve the structure and the quality of production and (or) social sphere;
- raw materials, means of their mining and processing;
- commodity output;
- mechanism of consumer market forming and sale of commodity output.

The subjects of innovation activity may be natural persons and (or) legal entities of Ukraine, natural persons and (or) legal entities of foreign states, stateless persons, their associations, which conduct innovation activity in Ukraine and (or) attract property and intellectual values, invest own or borrowed funds in the implementation of innovation projects in Ukraine.

Pursuant to the Law, the state regulation of innovation activity is performed as follows:

- definition and support of priority directions of innovation activity on state, branch, regional and local levels;
- forming and implementation of state, branch, regional and local innovation programs;
- creation of normative legal base and economic mechanisms for support and stimulation of innovation activity;
- protection of rights and interests of the subjects of innovation activity;
- financial support of implementation of innovations projects;
- encouragement of commercial banks and other financial crediting establishments, which credit implementation of innovations projects;

- support of functioning and development of contemporary innovation infrastructure.

The subjects of innovation activity may obtain financial support for implementation of financial projects by:

- full interest-free crediting (under the conditions of inflation indexation) of priority innovation projects at the expense of funds of the state budget of Ukraine, budget funds of the autonomous republic of Crimea and funds of local budgets;
- partial (up to 50%) interest-free crediting (under the conditions of inflation indexation) of priority innovation projects at the expense of funds of the state budget of Ukraine, budget funds of the autonomous republic of Crimea and funds of local budgets on condition, provided that the other funds necessary for project financing were invested by the project agent and (or) other subjects of innovation activity;
- full or partial reimbursement (at the expense of funds of the state budget of Ukraine, budget funds of the autonomous republic of Crimea and funds of local budgets) of interests paid by the subjects of innovation activity to commercial banks and other financial crediting establishments for crediting of innovation projects;
- granting of state guarantees to commercial banks which credit priority innovation projects;
- property insurance of implementation of innovation projects by the insurers in compliance with the law of Ukraine “on insurance”.

The sources of financial support of innovation activity shall be:

- funds of the state budget of Ukraine;
- funds of local budgets and funds of the autonomous republic of Crimea;
- own funds of specialized state and communal innovation financial crediting establishments;
- own or borrowed funds of subjects of innovation activity;
- other sources which are not prohibited by the legislation of Ukraine.

The subjects of innovative infrastructure constitute a separate group of participants of innovative relations, within the innovation process primarily perform function of providing, maintaining, facilitating the implementation of innovative activities by its subjects. At this stage the innovative infrastructure in Ukraine is only on the initial stage of its formation. In fact, only separate of its components are operate, and the missing elements complemented by functioning of versatile institutions.

Law of Ukraine
“On priority directions of innovative
activity in Ukraine” [3]

The Law defines legal, economic and organizational principles for the formation of an an integrated system of priority innovative activities and their implementation in Ukraine.

The purpose of the Law is to provide innovative model of economic development by focusing state resources on priority directions of scientific and technological renovation of production, increase competitiveness of domestic products on the domestic and foreign markets.

Priority directions of innovative activities are divided into strategic and medium-term priority directions. Strategic directions defined by the Verkhovna Rada of Ukraine for 5 years.

Strategic priority directions for 2011-2021 years are:

- 1) development of new energy transportation technology, implementation of energy efficiency, energy saving technologies, mastering of alternative energy sources;
- 2) development of new technologies for high-tech development of transport systems, space industry, aviation and shipbuilding, armament and military equipment;
- 3) assimilation of new technologies for production of materials, their processing and connectivity, creating nanomaterials and nanotechnology industries;
- 4) technological innovation and the development of agriculture complex;

- 5) introduction of new technologies and equipment for quality health care, treatment, pharmaceuticals;
- 6) widespread use of more cleaner production technologies and environmental protection;
- 7) development of modern information, communication technologies, robotics.

Law of Ukraine
“On priority directions of science
and technology” [4]

The Law defines legal and organizational principles of an integrated system of development and implementation of priority directions of science and technology in Ukraine, including, defines the priority areas of science and technology development ***for the period 2020:***

- 1) fundamental scientific research on the most important problems of scientific, technical, socio-economic, socio-political, human potential development to ensure Ukraine’s competitiveness in the world and sustainable development of society and the state;
- 2) information and communication technologies;
- 3) energy and energy efficiency;
- 4) environmental management;
- 5) life sciences, new technologies for prevention and treatment of communicable diseases;
- 6) new substances and materials.

Implementation of priority directions of science and technology development provided through development and implementation by defined priority thematic areas of research and scientific and technological development of state programs, state orders for scientific and technical products, training of scientific personnel, information and logistical support of scientific research and scientific and technical developments.

Procedure of state registration of innovative projects and maintaining the State Register of innovative projects [5]

According to this Procedure, the state registration of innovative projects is carried out, conducted State register of innovative projects and published information on innovative projects in the Official Bulletin of the State Agency of Ukraine for electronic government.

For registration of the entity must be submit the following documents:

- 1) a statement on consideration of innovative project in the form approved by MES on the proposal of State Agency of Ukraine for electronic government;
- 2) innovative project in the form approved by MES on the proposal of State Agency of Ukraine for electronic government, stitched, numbered, certified by signature and seal of the applicant;
- 3) business plan for innovative project on paper and electronic media;
- 5) a natural person, in addition, - copy of a document attesting the identity of person and a copy of the certificate of identification number;

To simplify and clarify the procedure of state registration of innovative projects, the Resolution of Cabinet of Ministers of Ukraine of 06.06.2012 No. 573 amended the Procedure of state registration of innovative projects, including review of innovative projects provide by the principle of “single window” and reduced the timing of their state registration. To create favorable transparent framework conditions for introducing innovative activity and implementation of innovative projects aimed designed in 2012, the draft Law of Ukraine “On Amendments to the Law of Ukraine” On innovation activity “, which was approved by the Government of Ukraine and submitted to the Verkhovna Rada of Ukraine.

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PART 5

LEGAL REGULATION FOR COMMERCIALIZATION OF SCIENTIFIC, RESEARCH AND DEVELOPMENT WORKS

Law of Ukraine “On scientific and scientific-technical activities” [2]

On November 26, 2015 Verkhovna Rada of Ukraine adopted, the new Law of Ukraine “On scientific and scientific-technical activities”. Positions of the new Law are significantly updated and improved to meet today’s requirements, when Ukraine embarked on the path of European integration, and when the agreement on associate participation of our country in scientific and innovative EU program “Horizon 2020” was signed.

This Law defines legal, organizational and financial principles of functioning of the system of measures directed at creation of conditions for scientific and scientific technical activities and ensuring needs of society and state in technological development.

Development of the science and equipment is the determining factor of progress of society, the growth in prosperity of his members, their spiritual and intellectual growth. It causes need of priority state support of development of the science as source of economic growth and integral component of national culture and education, creation of conditions for sale of intellectual potential of citizens in the sphere of scientific and scientific and technical activities, purposeful policy in ensuring use of achievements of

the domestic and world science and equipment for satisfaction of social, economic, cultural and other requirements.

Scientific technical activity is defined by the Law as intellectual creative activity directed at getting and use of new knowledge in all spheres of technique and technology. The main tasks of the Law are definition of legal status of subjects of scientific and scientific technical activity, material and moral stimuli ensuring prestige and priority of this sphere of people's activity, attraction to it of intellectual potential of nation.

The Law refers to subjects of scientific technical activity scientists, scientific and scientific pedagogical personnel as well as scientific establishments, higher educational establishments and public organizations that perform scientific and scientific technical activities.

The Law also defines conditions and procedure of providing state support to scientific institutions which activity is significant for life of society. Therefore, the Law provides for creation of state register of scientific establishments that consists of scientific establishments and organizations which shall be supported by state under decision of the authorized state body.

It is noted in the Law that National Academy of Sciences of Ukraine and branch academies of sciences - Ukrainian Academy of Agricultural Sciences, Academy of Medical Sciences of Ukraine, Academy of Pedagogical Sciences of Ukraine, Academy of Legal Sciences of Ukraine, and Academy of Arts of Ukraine are state scientific organizations which are based on state ownership. According to the Law the National Academy of Sciences of Ukraine is the highest scientific organization in the state which organizes and performs fundamental and applied researches on the most vital problems of natural, technical and humanitarian sciences and coordinates accomplishment of fundamental researches in scientific establishments and organizations.

The Law defines classification of posts of scientific personnel and academic degrees, procedure of their occupation and legal status of persons that occupy them. Besides the Law has provisions devoted to peculiarities of pension and social provision of scientists, procedure of determination of pensions, conditions of their setting and other.

The Law also regulates relations in the sphere of state management of scientific technical activity, sets authorities of central bodies of state power concerning subjects of this activity and defines principles, forms and methods of state regulation of the above relations.

The Law provides for the creation of state fund for fundamental researches with the purpose of financial support of fundamental scientific researches in the sphere of natural, technical and humanitarian sciences.

Great importance in this document is given to strengthening the social status of scientist, improving conditions of his work and pension provision, as well as the promotion and encouragement of young scientists.

In particular, the Law contains provisions which introduced:

- flexible mode of work in a scientific institution;
- eliminate financial discrimination of science sector by shifting the burden of financing payments to research pension on the state budget;
- possibility of housing by scientists by target budget or other sources of funding and its building by gaining preferential long-term loans;
- creation of public youth scholarships, awards and grants.

The Law contains provisions that are designed to stimulate activity of scientific institutions. Its provisions for research institutions introduced the possibility:

- be the founder of other legal entities engaged in scientific and scientific and technical activities;
- be the founder of the joint stock companies and limited liability companies;
- establish scientific and technical centers.

Provisions of the Law provides exemption from paying to the general fund of the State Budget of Ukraine a part of income (profit) from its financial and economic activities of government business enterprises and state-owned enterprises that relate to academic institutions as well as scientific-technical complexes based on state ownership.

Separately, document regulates issues on state certification of scientific institutions on the basis of adopted by the European

Research Area Committee scientometric indicators and establishes that the level of core funding these institutions will depend on the results of this attestation.

The document contains a separate article regulating grant funding for scientific and scientific-technical activities from the state budget, which will be provided free of charge and irrevocably exclusively on a competitive basis without applying procurement procedures.

The Law establishes the main objectives of international scientific and technical cooperation including integration of Ukraine to European Research Area and form of such cooperation, including - participation in relevant EU Framework Programmes for Science and Innovation.

Law of Ukraine
“On state regulation of activities
in technology transfer” [3]

Important area of innovation policy, in addition to infrastructure development is technology transfer, ie, transfer of technology, which is issued by the conclusion between individuals and/or entities bilateral or multilateral treaty that established, modified or terminated property rights and obligations with respect to technology and/or its components.

The Law is intended to ensure effective use of scientific, technical and intellectual potential of Ukraine, technological production, protection of property rights for domestic technology and / or its components in the states where it is planned or carried out their use, expansion of international scientific and technical cooperation in this area. In pursuance to implement this Law of Ukraine the required regulations were approved. However, the impact of technology transfer in Ukraine is still low.

The Law provides main purpose for state regulation of activities in the field of technology transfer, for the development of national industrial and scientific-technical potential, its effective use to address the socio-economic development and ensur-

ing technological production of domestic products on the basis of international experience, possible socio-economic, technological and environmental consequences of the use of technologies and their components, to promote production development, which uses the latest domestic technologies.

Direct activities related to the transmission of innovative products from its authors in production, regulated by the Law of Ukraine “On state regulation of activities in technology transfer” from September 14, 2006. This law defines the legal, economic, institutional and financial framework of state regulation in the field of technology transfer and aims to ensure the effective use of scientific, technological and intellectual potential of Ukraine, technological production, protection of property rights on domestic technology and/or their constituents in the states where planned or carried out their use, expansion of international scientific and technical cooperation in this area. To implement the Act and to methods of commercialization process development, created as a result of scientific and technological activities, the State Committee of Ukraine for Science, Innovation and order of 13.09.2010r . Number 18, approved the Guidelines on commercialization development, created as a result of scientific and technological activities. Guidelines define the possible ways of development and commercialization of methodological approaches, criteria and indicators used to evaluate their effectiveness.

To improve the system of technology transfer and the national innovation system of Ukraine to improve the functioning of innovation infrastructure and for the development of innovative brokerage in Ukraine State Committee of Ukraine for Science, Innovation and Information 27.12.2010 approved the Guidelines for the establishment and of innovative business incubator and guidelines for the establishment and operation of technology transfer centers.

In order to implement the provisions of the Law of Ukraine “On state regulation of activities in technology transfer” developed and implemented a number of regulations in the field of technology transfer:

- Resolution of the Cabinet of Ministers of Ukraine on June 4, 2008 № 520 “On approval of minimum rates of remunera-

tion to authors technologies and persons who exercise their transfer”, which is aimed at protecting the rights of all subjects of technology transfer and facilitate the development of a civilized market of technology transfer, innovative products goods and services in Ukraine and increase their level of competitiveness at the international level;

- Cabinet of Ministers of Ukraine dated February 6, 2008 № 252-r “On the transfer of authority to the Ministry of Education approval of the State Register of agreements on technology transfer”, which would codify and standardize information regarding the technology transfer and/or their components, to protect property rights on domestic technology and provide monitoring in this area. In the implementation of the Cabinet of Ministers of Ukraine developed procedure of state registration of contracts of technology transfer and the State Register of agreements on technology transfer, approved by order of the Ministry of Education of Ukraine 14.05.08 Number 409, which is registered with the Ministry of Justice of Ukraine dated 28.05.08, №464/15155.

To ensure the implementation of the Law, the Ministry of Education and Science of Ukraine jointly with the State Property Fund of Ukraine, National Academy of Sciences of Ukraine and other central executive authorities developed a number of regulations that are accordance with established procedure were made to the Cabinet of Ministers of Ukraine and adopted by this authority.

Law of Ukraine
“On special regime of innovation
activity of technological parks” [4, 7]

(the title edited by the Laws of Ukraine
04.10.2001, N 2743-III,
07.03.2002, N 3118-III)

With amendments and additions introduced by the Laws of Ukraine 04.10.2001, N 2743-III, 07.03.2002, N 3118-III,

11.03.2004, N 1702-IV (amendments introduced by subclause 1 clause 1 section I of the Laws of Ukraine dated 11.05.2004, N 1702-IV, came into force 01.01.2005), 25.03.2005, N 2505-IV, 12.01.2006, N 3333-IV (the Law of Ukraine dated 12.01.2006, N 3333-IV this Law is stated in the new version)

(Considering that in 2004 the special treatment in terms of VAT taxation and import duty set by this Law was not applied to import of equipment analogous to one produced by local manufacturers and in the case of raw materials and spare parts import according to the Law Of Ukraine 27.11.2003, N 1344-IV, taking into account the amendments of the Law of Ukraine 17.06.2004, N 1801-IV)

(Considering that in 2005 the special treatment in terms of VAT taxation and import duty set by this Law are not applied to the import of equipment and components analogous to those produced by local manufacturers and in the case of raw materials except those in the list stated by CMU according to the Law of Ukraine, 23.12.2004, N 2285-IV)

(In the text of the Law the wording “investment and innovation projects” has been changed to “projects of technoparks ” according to the Law of Ukraine, 11.05.2004, N 1702-IV)

(according to the Law of Ukraine, 25.03.2005, N 2505-IV, the word “investment” has been deleted from the title and the text of the Law)

This Law shall define legal and economic grounds for introduction and functioning of a special treatment of investment and innovation activity of the technological parks “Semiconductor Technologies and Materials, Fibre Electronics and Sensor Engineering” (Kyiv), “E.O. Paton Institute of Electric Welding” (Kyiv), “Institute of Monocrystals” (Kharkiv), “Vuglemash” (Donetsk), “Institute of Technical Thermal Physics” (Kyiv), Kyivska Politekhnikha (Kyiv) “Intellectual Informational Technologies” (Kyiv), “Ukrinfotekh” (Kyiv), “Agrotechnopark” (Kyiv), “Eco-Ukraine” (Donetsk), Instruments for Science and Education” (Sumy), Textile” (Kherson), “Resources of Donbas” (Donetsk), Ukrainian Microbiological Centre of Synthesis and Advanced Technologies” (Odesa), Yavoriv” (Lviv region), “Machine-building Technologies” (Dnipropetrovsk) – hereinafter referred to as technoparks).

Section I

General Principles

Article 1. Terms used in the Law Terms shall be used in the following meanings:

1) Technological part (Technopark) – is a legal entity or an association of legal entities (hereinafter technopark participants) acting on the basis of an agreement on joint activity without a separate legal entity created and contributions pooled to create an organizational basis for the execution of the projects of technoparks introducing science-intensive developments, hi-tech technologies into production and ensuring the industrial production of world-competitive products;

2) Agreement on joint activity without a separate legal entity created and contributions pooled by the Technopark participants (hereinafter – Agreement) – is an agreement between legal entities – the Technopark participants stating information on the composition of Technopark participants, their rights and liabilities, priority activities of the Technopark, management bodies and a ruling body of the technopark, their power and decision-making procedures, financing of the management bodies and the ruling body, procedures for the admission of new Technopark participants and expulsion of operating ones, as well as the procedures for the Technopark liquidation (termination of the agreement);

3) Technopark Participants – are legal entities – subjects of scientific, S&T and entrepreneurial activity that entered into Agreement according to this Law;

4) Technopark Ruling Body – is a legal entity – one of Technopark Participants which shall open on behalf of the Technopark Participants a special account of the Technopark and shall be assigned by the agreement to execute current management functions over the Technopark activity including registration of Technopark projects, usage of the Technopark's special account funds according the order established by this Law, control over the usage of the special accounts funds of the Technopark participants, check-up (verification) and preparation of propositions regarding alterations or termination of Technopark projects, preparation of reports on the Technopark activity, representing of the interests of the Technopark participants in State and local government au-

thorities, signing of agreements on behalf of the Technopark according to the current legislation and other functions assigned by the Agreement;

5) Joint Venture – is an enterprise created for the execution of Technopark projects, one of its founders is the Technopark or a Technopark Participant, and the others – residents or non-residents whose total contribution to the Statutory fund shall be not less than equivalent of USD 50 000 in the national currency;

6) Technopark Project – is a prepared by a Technopark set of documents, which shall include the description of interconnected activities of the Technopark, determine its participants and joint ventures (project implementers), co-implementers and manufacturers of products re: execution of scientific researches, technical, technological, engineering design, manufacturing of experimental batches and industrial production of innovation products, as well as re: financial, staff, marketing and commercial support of the production implementation of new goods and rendering of new services. The set of documents must pass the assessment stated by the CMU and be recorded in the State register kept by the central executive authority for science. Nomenclature and the amount of import into Ukraine of materials, equipment, machinery, components and other goods necessary for a Technopark project implementation, as well as amounts of experimental, research and industrial manufacturing of innovation products shall be determined by the central executive authority for science on a project to project basis;

7) Special Regime of Innovation Activity – is a legal regime that stipulates the State support aiming at the stimulation of the activity of Technoparks, their Participants and Joint Ventures when implementing the projects according to the priority activities of Technoparks;

8) Priority Activities of Technoparks– are economically and socially conditioned directions of S&T and innovation activity of a Technopark which meet the requirements of S&T and innovation priorities stated by the legislation and are oriented to the industrial manufacturing of competitive high-tech and innovation products and marketing of them locally as well as forming the export potential of the country.

Article 2. Scope of Effect of the Law

The effect of this Law shall cover Technoparks, their Participants and Joint Ventures implementing the Projects of Technoparks according to the Priority Activities of Technoparks.

Section II

Special Regime of Innovation Activity

Article 3. Special Regime of Innovation Activity of Technoparks

The Special Regime of Innovation activity shall be provided for a Technopark for 15 years and shall be applied to the implementation of the Projects of Technoparks. The State support to the innovation activity of technoparks shall be provided in a form of a financial support and target subsidising of Technopark Projects.

Article 4. State Registration of a Technopark

The State Registration of a technopark shall be carried out by the central executive authority for science. Technopark shall be issued a standard certificate evidencing the State Registration. The basis for the State Registration shall become the enlistment of the Technopark into the Preamble of this Law.

Article 5. Projects of Technoparks.

Projects of technopark implemented according to the requirements of this Law shall be developed according to the Priority Activities of technopark.

The Priority Activities of each technopark shall be developed according to the Laws of Ukraine “On Priorities of S&T Development” and “On Priorities of Innovation Activity in Ukraine”, considered by the Presidium of the NASU and approved by the central executive authority for science.

The consideration, assessment, State Registration of the projects of technoparks shall be executed by the central executive authority for science upon their submission to the NASU according to the order approved by the CMU.

The Projects of Technoparks which have passed consideration, assessment and are recorded in the State register according to the order approved by CMU shall be issued a certificate of a set standard evidencing the State registration of a Technopark Project by the central executive authority for science.

The State registration of a Technopark Project shall be issued within the period not exceeding 90 days from the date of submission of a Technopark Project to the central executive authority for science.

The State registration of a Technopark Project shall be issued for the period of a project implementation but not exceeding 5 years and shall be the basis for application of the special regime of innovation activity according to this Law and for opening of special accounts of technoparks, their participants and joint ventures.

Article 6. Financial Support of the Projects of Technoparks

The financial support of the projects of technoparks shall be executed through the budget programme for the support of the activity of technoparks.

Annually the State budget of Ukraine shall have funds assigned to the programme for the support of the activity of technoparks for:

- complete or partial (up to 50%) interest-free crediting (on terms of inflation indexation) of the projects of technoparks;
- complete or partial reimbursement of interests paid by the implementers of the projects of technoparks to commercial banks and other financial and credit institutions for crediting of the projects of technoparks.

The procedure of providing of the financial support to technoparks, their participants and joint ventures for the implementation of the projects of technopark shall be established by the CMU according to the Law.

Article 7. Targeted subsidies to technoparks

The State shall grant targeted subsidies to technoparks, their participants and joint ventures for the implementation of the projects of technoparks in a form of: import duty exemption for new machinery, equipment, components and other materials not manufactured in Ukraine which are to be used implementing of the projects of technoparks; tax anticipation bill for the amount of the tax liability calculated according to the Law of Ukraine "On VAT" when importing new machinery, equipment, components with the repayment term of 720 calendar days, and when importing materials not manufactured in Ukraine - with the repayment term of 180 calen-

dar days from the date of submission the bill to customs authorities; income tax amount received when implementing the projects of technoparks calculated according to the procedure of the Law of Ukraine “On Taxation of Corporate Income”. The stated amounts of taxes, which are calculated in the process of implementation of technopark projects, are not paid by the technoparks, their participants and joint ventures to the budget, but are credited to the special accounts of the technopark projects, their participants and joint ventures within the terms established by the Law of Ukraine “On the Procedure for Payment of Taxpayers’ Liabilities to Budgets and State Purpose Funds” and other legislative acts.

Of that 50% of the stated amounts are credited to the special accounts of the technoparks, participants and joint ventures which are the project implementers, and the other 50% are credited to the special account of the ruling body of the corresponding technopark.

The procedure of crediting of the tax amounts to the special accounts of the technopark projects, their participants and joint ventures, the procedure of utilisation of targeted subsidies and the that one of control over their utilisation shall be set by the resolution of the Cabinet of Ministers of Ukraine.

Article 8. Utilisation of targeted subsidies

The targeted subsidies credited to the special account of technoparks, their participants and joint ventures shall be used by technoparks, their participants and joint ventures implementing projects of technoparks for:

- execution of scientific, research and design activity according to the priority activity of technoparks;
- creation, development, modernisation and reconstruction of technical, scientific, experimental and industrial sites, including tools, equipment and machinery to be used for innovation activity;
- preparation of design and industrial documents, specifications, technical projects and costs for the preparation of the manufacturing of innovation products;
- patenting of developments, purchase of IPR (patents, licences for exploitation of inventions, useful models, industrial model, know-how, etc.);

- overhead and operational expenses (materials, hardware, etc) occurring in the course of innovation activity;
- purchase of equipment, machinery, other production means related to the implementation of innovations;
- scientific organisational activity of the ruling body of a technopark, organisation and participation in scientific, S&T conferences, seminars and exhibition, publication of results of scientific researches according to the priority activities of technoparks.

The targeted subsidies credited in the process of implementation of the projects of technoparks to the special accounts of participants and joint ventures and not utilised within 3 months upon the completion of a technopark project shall be paid to the State budget of Ukraine.

The targeted subsidies credited in the process of implementation of the projects of technoparks to the special accounts of a technopark (or its ruling body) and not utilised within the validity term of the State registration certificate of a technopark shall be paid upon the expiration of the latter to the State budget of Ukraine.

The implementation of a technopark project shall not be the basis for the reduction of tax liabilities for the main type of activity of an implementer of this technopark project.

Article 9. Loans to the technopark projects

Technopark projects shall be priority ones for applying to the Ukrainian State Innovation Company and its regional branches.

Article 10. Depreciation of fixed assets of technoparks

Technoparks, their participants and joint ventures implementing the projects of technoparks shall be allowed to use an accelerated depreciation for the fixed assets engaged in the project, and an annual 20% rate of the accelerated fixed assets of 3rd and 4th group shall be set.

And here the depreciation of the 3rd group fixed assets engaged in the technopark project shall be calculated until the balance value of the group reaches the zero value.

Article 11. Peculiarities of a currency control

Settlements for export-import transaction executed implementing the projects of technoparks according to this Law shall be carried out within 150 calendar days.

Funds received in a foreign currency for the realisation of products (sale of goods, execution of work and rendering of services) of technoparks, their participants and joint ventures shall not be subject for mandatory sale.

Article 12. Control and responsibility over the implementation of the projects of technoparks

The control and monitoring over the implementation of the projects of technoparks shall be executed by the central executive authority for science according to the order set by the CMU.

Technoparks, their participants and joint ventures shall execute accounting and tax recording of transactions related to the implementation of the projects of technoparks.

Targeted subsidies amounts credited to the special accounts of technoparks, their participants and joint ventures and misused shall be subject to repayment to the State Budget of Ukraine.

In case of a misuse of imported materials, equipment, machinery, components and other goods (not for the needs of the implementation of the projects of technoparks), the amounts of the import duty and VAT calculated according to the customs legislation of Ukraine and according to the Law of Ukraine "On VAT" shall be subject to repayment to the State Budget of Ukraine. Besides this the taxpayer shall have to increase tax liabilities according to the results of the tax period when such violation occurred by the amount of the import duty and VAT would have been paid when importing such goods, as well as pay the fine calculated for this amount of taxes taking into account 120% of the NBU discount rate valid at the date of the tax liability increase for the period of misuse.

Managers of technoparks, their participants and joint ventures shall be held liable within the frame of legislation for the misuse of imported materials, equipment, machinery, components and other goods, as well as targeted subsidies credited to the special accounts of technoparks, their participants and joint ventures.

If technoparks, their participants and joint ventures violate article 7 of the present Law when implementing the projects of technoparks, the State registration of such technoparks shall be cancelled by the resolution of the central executive authority for science. Besides this the technoparks, their participants and joint

ventures – implementers of such projects shall have to increase the amount of their tax liabilities, according to the results of the tax period when the cancellation of the Technopark State registration takes place for the amount of funds credited to the special account targeted subsidies from the date of such violation occurrence till the date of the resolution on the cancelation of the Technopark State registration, as well as pay the fine calculated for the stated amount taking into account 120% of the NBU discount rate valid at the date of the tax liability increase.

Article 13. Peculiarities of the Ukrainian legislation effect when introducing the special regime of the innovation activity

The relations related to the implementation of the projects of technoparks according to the priority activities of the technoparks shall be regulated by this Law as well as by the connected to it other legal standards and acts.

When introducing special regime of technoparks innovation activity the legislation of Ukraine regarding issues regulated by Articles 5 - 11 of the present Law shall operate considering the peculiarities stipulated by this Law.

The State shall guarantee the stability of the stated by this Law special regime of innovation activity of technoparks. Any amendments to the legislation must not worsen the terms of activity of technoparks, their participants and joint ventures implementing the projects of technoparks on terms of the special regime of innovation activity of technoparks.

Section III Closing principles

1. This Law will come into effect on 01.02.2006.

2. As for innovation and investment projects of technoparks the special regime of which was cancelled by the Law of Ukraine “On the State Budget of Ukraine for 2005” and some other legislative acts of Ukraine”, their execution period shall be extended for the period of time from 31.03.2005 till the day when this Law comes into effect.

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The President of Ukraine
Kyiv
July 16, 1999
№ 991-XIV

L. Kuchma

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PART 6

SCIENCE PARK AS AN IMPORTANT MECHANISM FOR SCIENTIFIC RESEARCH RESULTS IMPLEMENTATION

Legal basis for scientific parks activity

An important place in the group of legislative acts, which define the basic principles of innovative development of the country, take the Law of Ukraine “On innovation activity” of 04.07.2002 No. 40-IV and the Law of Ukraine “On Priorities of Innovation Activities in Ukraine” No. 3715-VI of 08.09.2011. The Law of Ukraine “On innovation activity” defines the objects and subjects of innovative activity, types and sources of financial support, procedure of creation and activities in the field of innovative public financial and credit institutions, the purpose and principles of the state innovative policy. The Law of Ukraine “On priorities of innovation activity in Ukraine” defines the legal, economic and organizational principles of formation and realization of priorities of innovative activity in the country. For the main purpose is to create the legal basis for the concentration of resources in the leading areas of scientific and technological renovation of production and services, ensuring the domestic market competitive by high-tech products and output it to world markets.

Current normative documents are the Resolution of the Verkhovna Rada of Ukraine “On recommendations of parliamentary hearings on the topic: “The Strategy of Innovation Development of Ukraine for the period of 2010-2020 under conditions of globalization challenges” No. 2632-VI of 21.10.2010, in particular, it highlighted the need for:

- creation of enlarged regional universities, turning them into powerful educational and scientific innovative centers;
- changes in approaches to the formation of state order for training specialists with higher education, including highly qualified personnel on innovative activity (management, marketing, finance, commercialization);
- creation of a single scientific and educational training mechanism for innovative sphere;
- state support for young people, which passes education and training in leading foreign universities and research centers of the areas of innovation;
- improvement of education and research infrastructure and conduct basic and applied scientific research in higher education institutions, implementation of research results in the educational process;
- full support of scientific and technical activities for the further development of science in leading higher educational institutions, update their material and technical base, including through the ensuring modern high-tech knowledge based equipment, development of structure for innovative activity and technology transfer for the implementation of scientific and technological developments;
- development of innovative infrastructure in Ukraine: innovative business incubators, innovative development centers, technology transfer centers and other organizational forms for infrastructure provision of innovative activity, combining science, production and business, including through the provision of state support.

The state of science and technology and innovative spheres has repeatedly seen by the National Security and Defense Council of Ukraine. In particular, after the meeting of the National Security and Defense Council of Ukraine of April 6, 2006 the President of Ukraine issued the Decree of July 11, 2006 No. 606/2006 "On the decision of the National Security and Defense Council of Ukraine of April 6, 2006" "On the state of scientific and technological sphere and measures to ensure innovative development of Ukraine", one of the objectives, set out in this document, was to

develop the Concept of national innovation system development and action plan for its implementation. The Concept of national innovation system development was approved by the Resolution of the Cabinet of Ministers of Ukraine “On Approval of the Concept of national innovation system development” of 17.06.2009 No. 680-p.

Scientific and Research Parks recognized as one of the most important structure towards commercialization of innovations, their activity is regulated by the Law of Ukraine “On Scientific Parks” [2]. This law regulates the legal, economic, organizational relations connected with the creation and operation of science parks, and is aimed at intensifying the processes of development, implementation and production of innovative products on the domestic and foreign markets.

Under this law the Science Park is a legal entity which is formed on the initiative of higher education institution and / or research institution by joining of the founders contributions to the organization, coordination, control and process of development and implementation of Science Park projects. Science park created for the development of science, technology and innovative activities in higher education institution and / or scientific institution, effective and efficient use of the existing scientific potential, material and technical basis for the commercialization of research results and their introduction on the domestic and foreign markets.

The main functions of the Science Park are:

- creation of new types of innovative product, implementation of measures for their commercialization, organization and ensure the production of high technology, competitive on domestic and foreign markets innovative products;
- information and methodological, legal and consulting providing of the scientific park partners and founders, providing patent licensing assistance;
- involvement of students, graduates, graduate students, researchers and employees of higher education institution and / or research institutions to develop and implement science park projects;
- to promote and support of innovative small businesses;

- organization of training, retraining and advanced training of specialists, necessary for the development and implementation of the science park projects;
- attract and use in their work risk (venture) capital, support for high-tech industry;
- protection and representation of interests of the founders and partners of the science park in public authorities and local governments, and in relations with other business entities during the organization and implementation of the Science Park projects within the limits set by the constituent documents of the Science park;
- development of international and domestic cooperation in science, technology and innovation, promoting foreign investment;
- perform other functions allowed by the legislation of Ukraine.

The list of priorities of the science park is formed under the Law of Ukraine “On Priorities in Innovation Activities in Ukraine” (433-15) in accordance with the directions of scientific activity of higher education institution and / or research institutions to the needs of the region (territory), where the science park located. Under this Law the strategic directions of innovative activity by 2021 include:

- 1) mastering of new technologies of energy transportation, implementation of energy efficiency, resource saving technologies, development of alternative energy sources;
- 2) exploring of new technologies of high-tech development of transport system, rocket and space industry, aviation and shipbuilding, armament and military equipment;
- 3) development of new production technologies, materials, their processing and interconnection, creation of nano-materials industry;
- 4) technological innovation and development of agriculture;
- 5) introduction of new technologies and equipment for quality health care, treatment, pharmaceuticals;
- 6) widely used of technologies of cleaner production and environmental protection;
- 7) development of modern information, communication technologies, robotics.

According to this conception of national innovative system development – a national innovative system – is a combination of legislative, structural and functional components (institutions) involved in the creation and application of scientific knowledge and technology and determine the legal, economic, organizational and social conditions for the innovative process. National innovation system includes subsystems:

- 1) *government regulation*, consisting of legislative, structural and functional institutions that establish and ensure the observance of rules, regulations, requirements in innovation and interaction of all subsystems of the national innovative system;
- 2) *education* consisting of higher educational establishments scientific-methodological and methodical institutions, scientific and industrial enterprises, state and local education authorities and educational institutions that conduct training, retraining and advanced training of staff;
- 3) *knowledge generation*, consisting of scientific institutions and organizations regardless of ownership, conducting research and development and create new scientific knowledge and technology, public research centers, academic and branch institutes, research departments of higher education institutions, research and design units of businesses;
- 4) *innovative infrastructure* consisting of production-technological, financial, information-analytical and expert consulting component, and also with technopolises, technological, industrial and science parks, innovative centers and technology transfer centers, business incubators and innovative structures of other types; information networks of scientific and technical information, expert consultancy and engineering firms, public and private institutional investors;
- 5) *production*, composed of organizations and enterprises that produce innovative products and provide services and (or) are consumers of technological innovation.

The purpose of the development of national innovative system is creating conditions for increasing the productivity and competi-

tiveness of domestic commodity producers through technological modernization of the national economy and raising their innovation activity, production of innovative products, the use of advanced technologies, methods of organization and economic management to improve human well-being and ensure sustainable economic growth.

Science park created and operates according to the Commercial and Civil Codes of Ukraine [9,10], the laws of Ukraine «On Higher Education», «On investment activity», «On scientific and technical activity», «On innovation activity», «On State Regulation of Activities in the Sphere of Technology Transfer» and other regulations. It is with the Commercial Code of Ukraine funneling possible business associations of the science park founders, namely:

Association – contractual union set up for the purpose of permanent coordination of economic activity of enterprises, united by one or more centralized production and management functions, specialization and cooperation development of production, organization of joint production based on the association of financial and material resources mainly meet the economic needs of association members. The Association has no right to interfere in economic activity of enterprises – participants of association.

Corporation – contractual union set up through a combination of industrial, scientific and commercial interests of enterprises that have teamed up with the delegation of their certain powers for centralized regulation of activity of each member by management bodies of the corporations.

Consortium – a temporary charter union of enterprises to achieve by its participants certain joint economic purpose (implementation of target programs, scientific, technical, construction projects, etc.). The consortium uses the funds from members, centralized resources, allocated to fund appropriate programs, and funds coming from other sources in the manner specified by the charter. If a goal of its creation achieved, the consortium ceases to operate.

Concern – charter union of enterprises and other organizations based on their financial dependence on one or a group of union participants, with centralized functions of scientific, technological and industrial development, investment, financial, foreign trade and other activities. Participants of the concern give it a part of their powers, including the right to represent their

interests in relations with authorities, other companies and organizations. Participants of the concern may not simultaneously be members of the other concern.

The main purpose of science parks is to determine, disclosure and development of innovative potential of the country, its regions, ensuring the needs of the economy in innovative products through the formation within them favorable conditions for the commercialization of research. Due to creation within science parks an appropriate financial and technological conditions for the implementation of innovative projects, management support of scientific and technological development, protection of intellectual property of the author technical solution can maximally remove obstacles in the path of development from the idea to its realization.

Law of Ukraine "On Science Parks" [2, 11]

This Law shall regulate legal, economic, organisational relations in respect to the creation and operation of science parks, and aims to enhance the processes of development, implementation and production of innovative products on the internal and external markets.

Section I

General Principles

Article 1. Terms used in the Law

Terms shall be used in the following meanings:

Partnership agreement with a science park – is an agreement between a science park and economic entities on the terms and conditions of participation in the process of development and execution of science park projects;

Science park founders – include a higher education institution of IV accreditation level (hereinafter Higher Education Institution) and/or a scientific institution and other legal entities that shall enter into a foundation agreement on creation of a science park;

Science Park – is a legal entity created on the initiative of a higher education institution and/or a scientific institution pool-

ing contributions of founders for the organisation, coordination and control over the process of development and execution of science park projects;

Science park partners – are economic entities that shall enter into a partnership agreement with a science park;

Priority Activities of a Science park - are economically and socially conditioned directions of S&T and innovation activity, which shall meet the objective of creation of the science park, its sector profile and/or specialisation of the higher education institution and/or a scientific institution (which are the basic elements of the science park), take into account the needs of the region (area) the science park is located in, and comply with the activities stated by the Law of Ukraine “On Priorities of S&T Development” (2623-14), “On Priorities of Innovation Activity in Ukraine” (433-15) and other legislative acts of Ukraine in the sphere of science, S&T and innovation;

Science park projects – is a set of documents determining the procedure and complex of activities necessary for the development, creation and implementation of innovation products and shall include data on material and technical, financial and staff resources necessary for the execution of the project according to the requirements of this Law.

Article 2. Legislation on a Science park

A Science park shall be created and operated according to the Economic (436-15) and Civil (435-15) codes of Ukraine, Laws of Ukraine “On Higher Education” (2984-14), “On Investment Activity” (1560-12), “On Scientific and S&T Activity” (1977-12), “On Innovation Activity”(40-15), “On State Regulation of Activities in the Sphere of Technology Transfer” (143-16), other legal acts regulating the relations in S&T and innovation spheres, taking into account the peculiarities stated by this Law.

Section II

Organisational Principles for the Creation and Operation of a Science Park

Article 3. Objective for the creation of a Science Park

A Science park shall be created for the development of S&T and innovation activity in a higher education institution and/or a scientific institution, effective and rational exploitation of sci-

entific potential, technical facilities for the commercialisation of results of scientific researches and their implementation.

Article 4. Functions of a Science park

The main functions of a Science park shall be:

- creation of new types of innovation products, execution of activities re: their commercialisation, organisation and provision of production with innovative products which are science-intensive and competitive both on internal and external markets;
- provision of founders and partners of a Science park with informational and methodological, legal and consulting services, patent-license support;
- engagement of students, graduates, post-graduates, scientists and employees of a higher education institution to the development and execution of the projects of a Science park;
- support to the development of small innovative entrepreneurship;
- organisation of training, re-training and capacity enhancement of specialists necessary for the development and execution of the projects of a Science park;
- involvement and usage of risk (venture) capital in its activity, knowledge-based production support;
- protection and representation of interests of a Science park founders and partners on state national and local authorities, as well as in relations with other economic entities when organising and execution of the projects of the Science park within the limits stated in the founding documents of the Science park;
- development of local and international cooperation on the field of S&T and innovation activity, support to the attraction of foreign investments;
- execution of other functions which do not violate the legislation of Ukraine.

Article 5. Founding document of a Science park

1. Science Park shall be created and shall operate on the basis of foundation agreement and a Charter of it, the requirements to which are stated by this Law.

2. The foundation agreement of the creation of a science park shall state the commitment of the founders to create a science park, the procedure of their joint activity re: its creation, terms and conditions for founders transferring property and intangible assets, taking into consideration the peculiarities stated by this Law.

3. The Charter of a science park shall state the name of the legal entity, its objective, tasks and functions of the science park according to the requirements of this Law, information on the composition of founders, size and the procedure for the creation of the Charter fund and other funds, procedure for the distribution of profits and losses, science park managing body, its authorities and decision-making procedure, procedure to enter and leave the science park, liquidation procedure and other information meeting the requirements of Ukraine and this Law.

Article 6. Limitations of a Science park activities

The activities of a science park shall not include trading-intermediation activity, rendering of personal (domestic) services, production and processing of excisable goods and other ones that do not correspond to the objective of the science park.

Article 7. Creation of a Science park

1. Decision on creation of a science park shall be made by its founders agreeing if with the corresponding specially authorised central executive authority for S&T and innovation activity according to the procedure (93-2010-п), approved by the CMU.

2. In case if the founders of the science park are state or communal economic entities executing their activity on the basis of the right of economic supervision or the right of operational supervision, the decision on participation of such entities shall be made agreeing it first with the corresponding authorities responsible for the state or communal property allocated to such economic entities.

3. The following documents shall be submitted for the approval of the decision on creation of a science park:

- draft founding documents of the science park;
- list of priorities for the science park activities;
- information on scientific results the implementation of which will ensure the development of the science park;

- information on the founders of the science park available potential production, engineering, transport and social infrastructure to be used in the activity of the science park.

4. Science park shall obtain the status of a legal entity from the moment of its state registration according to the established by the Law procedure.

5. Other legal entities shall be prohibited to use words “science park” in their names.

Article 8. Priority Activities of a Science park

1. The list of priority activities of a science park shall be formed according to the Laws of Ukraine “On Priorities of S&T Development” (2623-14) and “On Priorities of Innovation activity in Ukraine” (433-15) according to the scientific activity of a higher education institution and/or a scientific institution taking into account the needs of the region (area) the science park is located in.

2. The list of priority activities of a science park shall be approved by the specially authorised central executive authority for S&T and innovation activity when agreeing the decision for the creation of the science park.

Article 9. Status of the Founders of a Science Park

1. The founders of a science park shall keep the status of a legal entity and they shall be subject to the force of laws regulating their activity.

2. Founder of a Science Park shall have a right to:

voluntarily leave the science park according to the terms and procedures stated in the Charter of the science park keeping the mutual liabilities and contracts signed with other economic entities;

in the corresponding order receive information from the science park on its activity;

receive part of the profit from the activity of the science park according to the procedure stated in the Charter of the science park.

Article 10. Managing bodies of a Science Park

Science Park shall have a highest managing body and an executive managing body of the science park. The managing bodies' functions shall be determined by its Charter.

Article 11. The highest managing body of a science park

1. The highest managing body of a science park shall be a General Assembly of the science park founders, the functions of which shall be stated in the charter of the science park.

2. The highest managing body of a science park shall: approve the charter of the science park and make amendments to it; create an executive body of the science park; settle financial and other issues according to the charter of the science park.

Article 12. The executive managing body of the science park

1. The executive managing body of the science park shall be formed by the General Assembly of the science park founders according to the procedure stated in the charter of the science park.

2. The executive managing body of the science park shall settle the issues of the operational activity of the science park coordinating the activity of its founders and partners re: execution of science park projects.

Article 13. Peculiarities of the status of a higher education institution and/or a scientific institution as that of a founder of a science park

1. Higher education institution and/or a scientific institution can become a founder of legal entities and/or their unions for the organisation and execution of science park projects.

2. Higher education institution and/or a scientific institution shall have a right to be a lessor of premises and equipment for the partners of the science park for the term of execution of science park projects according to the article 20 of this Law.

3. Higher education institution and/or a scientific institution shall participate in the formation of the charter fund of the science park contributing intangible (property rights for IP) assets according to the procedure stated by the Ukrainian legislation.

4. When liquidating the science park according to the decision of the founders or on the basis of a corresponding court decision, including the declaration of a science park bankrupt, the property rights for IP created at the expense of budget money shall not be included to the composition of the liquidation pool and shall be returned to the higher education institution and/or a scientific institution which passed them to the charter fund of the science park.

5. Higher education institution and/or a scientific institution can become a founder of one Science Park.

6. Higher education institution and/or a scientific institution shall execute control over the activity of the science park and listen to annual reports on its.

Section III

Peculiarities of the development and execution of science park projects

Article 14. Development and acceptance of science park projects

1. Science park projects shall be developed on a competitive basis within the priorities of the activities of the science park considering the requirements of Laws of Ukraine “On Innovation Activity” (40- 15), “On the State Regulation of the Activity in the sphere of Technology Transfer” (143-16), “On the On Special Regime of Innovation Activity of Technological Parks” (991-14).

2. Science park projects shall be submitted to the executive managing body by legal and/or private individuals according to the terms of the proposal competition for the implementation of the priorities of the science park activity. (hereinafter – competition).

3. The regulations of the competition shall be developed and approved by the executive managing body of the science park.

4. As a result the executive managing body of the science park shall make a decision regarding the execution of the science park project and sign a partnership agreement.

Article 15. Registration of science park projects.

1. The executive managing body of the science park shall register all projects of the science park regarding the execution of which there is a partnership agreement signed.

2. Science park projects, the execution of which requires state support according to Article 19 of this Law, shall be registered by the CMU.

3. As for the science park projects that require import of scientific, lab and research equipment, as well as components and materials not produced in Ukraine, then there shall be documents added stating the items and amount necessary to import. These documents shall become integral parts of the project of a Science Park.

4. The duration of a project implementation shall not exceed 7 years from the date of its state registration.

Article 16. Monitoring the implementation of science park projects

1. The executive managing body of the science park shall monitor the execution of science park projects.

2. The results of a scientific project execution shall be presented in reports and submitted to the executive managing body of the science park according to the terms of the partnership agreement.

3. The executive managing body of the science park shall generalise the information on the execution of the science park projects and submit the information on the results of the science park activity to the higher education institution and/or a scientific institution upon their request and to the specially authorised central executive authority for S&T and innovation activity according to the established order.

4. If a partner of the science park violates the requirements of a science park project, indices and terms of its implementation, the executive managing body of the science park shall have a right to make a decision on termination of the science park project completely or partially due to one-way refusal to execute conditions of the partnership agreement, which in its turn shall be considered terminated or amended.

5. In case if the terminated completely or partially project has received a state support according to this Law, the executive managing body of the science park within 3-day term from the date of the project termination decision shall submit to the specially authorised central executive authority for S&T and innovation activity a justified request on the cancellation of the state registration of the science park project or on making amendments to the state register of science park projects.

6. The specially authorised central executive authority for S&T and innovation activity based on the justified request of the executive managing body of the science park shall cancel the state registration of the science park project or make amendments to the register of science park projects according to the established by the legislation procedure.

7. In case of cancelation of the state registration of the science park project, it shall not be the subject to the force of articles 19, 20 of this Law.

8. Property, financial and other consequences that arising among the partners of the science park in case of partial or complete termination of a science park project shall be stated in the partnership agreement.

9. The results of execution of a science park project shall be accepted by the executive managing body of the science park according to the terms and conditions of the partnership agreement and specifications for the science park project.

Section IV

State Support of Science Parks Activity

Article 17. Property rights for technologies and IP.

1. Development and implementation of science park projects shall be executed for the funds of the science park and its partners and/or state and local budgets.

2. Science park projects executed for the funds of the science park and its partners and which do not need state support according to this Law shall not require their state registration.

3. Property rights for technologies and IP created implementing science park projects shall be owned by the science park and/or its partners, except the cases stated in part 4 of this article.

4. The central executive authority supervising the higher education institution and/or a scientific institution can limit according to the legal procedures the property rights for the usage and disposal of technologies and IP created using state funds, if the technology and/or IP are:

attributed to the sphere of national security and defence of the State;

acknowledged as such to be used in public interests;

finalised for an industrial production and sale of finished goods exceptionally at the expense of the state funds.

5. In cases stated in part 4 of this article, the science park and/or its partners shall have a right to use the technology and/or IP created using state funds for their own needs unless otherwise stated by the central executive authority supervising the higher education institution and/or a scientific institution.

6. Science Park and/or its partners within 1 month from the day of creation of a technology and/or PI for the state funds shall inform the central executive authority supervising the higher education institution and/or a scientific institution on the created technology and/or IP.

7. The central executive authority supervising the higher education institution and/or a scientific institution within 2 months upon receipt of the notification stated in part 6 of this article shall inform the science park and/or its partners on its decision re: property rights limitation for the technology and/or IP and the reasons for such limitation according to part 4 of this article.

8. If the central executive authority supervising the higher education institution and/or a scientific institution within the term stated in part 7 of this article does not inform on the decision done to the science park and/or its partners, the exclusive rights for the technology and/or IP are owned by the science park and/or its partners according to the Ukrainian legislation.

9. In case if the executive authority supervising the higher education institution and/or a scientific institution violates parts 3-7 of this article, the science park and/or its partners shall have a right to go to court protecting their rights.

Article 18. State order for products, services and works produced by science parks

1. Requests of science parks re: state order for goods, services and works to satisfy the state needs shall be considered as a priority.

2. Execution of the state order by a science park shall be executed on a contract basis according to the procedures stated by the legislation.

Article 19. Special regulations re: import duty for scientific, lab and research equipment, components and materials for the execution of science park projects

1. If the science park project is registered according to part 2 of article 15 of this Law the scientific, lab and research equipment, components and materials not produced in Ukraine shall be imported duty-free according to the nomenclature and amounts stated in the science park project.

2. The order of customs registration, nomenclature and amounts of import of goods stated in part 1 of this article shall be determined by the CMU.

3. The regime of import duty exemption shall be valid for the implementation period of the science park project but not exceeding 2 years from the day of approval of the nomenclature and amounts of supplies of the corresponding equipment, and not more than 1 year for components and materials.

4. Control over the special-purpose usage of the scientific, lab and research equipment, components and materials not produced in Ukraine shall be executed according to the Law.

5. In case if the imported scientific, lab and research equipment, components and materials are misused – not used for the needs of science park projects, the amount of import duty calculated according to the customs legislation of Ukraine shall be paid to the State budget of Ukraine. And the tax payer misusing the imported goods shall have to increase its taxation liabilities for the tax period the violation occurred in, by the amount of import duty that should have been paid for importing of a scientific, lab and research equipment, components and materials, as well as pay the fine calculated for this amount of taxes taking into account 120% of the NBU discount rate valid at the date of the tax liability increase for the period of misuse.

Article 20. Rent of premises of a higher education institution and/or a scientific institution – founder of the science park

1. According to the request of the executive managing body of the science park, the higher education institution and/or a scientific institution and a science park partner shall sign a rent agreement for the term stated in the conditions of the science park project execution – for the projects registered according to the article 15 of this Law, the implementation of which requires usage of premises of the higher education institution and/or a scientific institution.

2. The rent agreement signed according to part 1 of this article can state a particular procedure of payment for utilities and rent fee. The amount and terms of those payments shall be stated by the higher education institution and/or a scientific institution and agreed with the executive authority supervising the higher education institution and/or a scientific institution.

Section V

Economic Grounds for the activity of a Science Park

Article 21. Property relations and financing of a science park

1. Executing Charter tasks the science park can create a charter and emergency funds, innovation activity support fund and other funds allowed by the Ukrainian legislation.

2. The charter fund of a science park shall be separated in shares among the founders according to their contributions.

3. The contributions can be done in a form of money, stocks and other items or property/other alienable rights what have money-valued.

4. State or communal economic entity executing its activity on the basis of operating control can transfer its property to the charter fund of a science park only having previously approved this by the central executive authority supervising its activity.

5. Transfer to a science park charter fund of real estate, as well as air and sea crafts, crafts of internal navigation and railway vehicles being on the balance of state economic entities can be done only having it previously approved this by the State Property Fund.

6. State property items of the national significance and which are not subject to privatisation according to part 2 article 5 of the Law of Ukraine "On privatisation of State Property" (2163-12), as well as those listed as the objects of the state property right not subject to privatisation approved by the Law of Ukraine "On the list of objects of state property right not to be privatised" (847-14) cannot be transferred to the charter fund of a science park.

7. There can be the following financing source of a science park:

Charter fund and other funds of the science park;

Financial revenues from the activity of the science park;

Investments granted to the science park;

Charity contributions for the development of the Science Park and execution of science park projects;

State and local budgets funds;

Money of customers;

Other contributions allowed by the Ukrainian legislation.

Article 22. Banking servicing of the activity of a science park Science Park shall have a right to open accounts in the national and foreign currencies in banking and other institutions.

Article 23. Termination of a science park

1. Termination of a science park shall be carried out only liquidating it according to the decision of the founders or on the basis of a corresponding court decision.

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The President of Ukraine
Kiev, 25.06.2009
№ 1563-VI

V. Yuschenko

The experience of science parks activity in Ukraine

In recent years, with the support of the state conducted a large number of different events dedicated to the improvement of modern innovation policy. In particular, the problem of national innovative system formation involving parliamentarians and businessmen, government officials, National Academy of Sciences, universities and innovative structures was on June 17 2009 parliamentary hearings devoted to "The strategy of innovative development of Ukraine for 2010-2020 in terms of global challenges". Ministry of Education and Science of Ukraine held a number of measures to adapt the global experience in functioning of the various types of innovative structures to Ukrainian realities. Higher educational institutions of Ukraine joined to the creation on their base innovative structures of various types, including science parks.

Science Park "Kyiv Polytechnic" – is a legal entity that was created by the initiative of the National Technical University of Ukraine "Kyiv Polytechnic Institute" for purposes of organization, coordination and management of such process as commercialization of university research.

Science park was created to promote and support science, technology and innovation activities of the university, effective and efficient use of existing scientific potential of logistics for the commercialization of research and implementation in domestic and foreign markets.

The Law of Ukraine "On the Science Park "Kyiv polytechnic", which was adopted in December 2006, opened the way for companies interested in cooperation with scientists, faculties and departments, obtaining know-how and attracting high-quality human capital. This law created favorable rules for media innovation. Moreover, we do not require any exemptions from the state - our strength lies in the interaction, the synergy of interaction between participants. For dry according to the law created an environment where travelers feel scientists, inventors, and at the same time, businessmen who want to associate your business with high-Tecom.

Science Park "Kyiv Polytechnic" organizes the interaction of four stakeholder groups: the first - the science of generating know-how, the second - the faculties and departments that generate high-quality human capital, the third - the companies that are on the market of high-tech products and is constantly in need of feeding know-how and human capital, and the fourth - investment and venture funds.

Science Park "Kyivska Polytechnika" is a form of scientific and research process organization which promotes effective commercialization of high-tech developments and was established on the basis of National Technical University of Ukraine "Kyiv Polytechnic Institute" (NTUU "KPI") in compliance with the Law of Ukraine "On Science Park "Kyivska Polytechnika" No. 523-V of December 22, 2006.

A transparent interaction scheme and developed infrastructure attract innovative companies and venture investors for the large-scale projects realization. Correspondent governmental support provides favorable legal background for the nationwide project development and, as a result, for innovative development of the Ukrainian economy.

Mission

Creation of competitive advantages for participants and partners of Science Park "Kyivska Polytechnika" by means of integration of education, science and business.

Aim

Commercialization of scientific research results and their implementation on domestic and foreign markets.

Tasks

- Designing and realization of innovative projects.
- Search of investors and partners.
- Management of innovative developments.
- Establishment and development of innovative companies.
- Promotion and marketing of science-intensive products on domestic and foreign markets.
- Networking with domestic and foreign scientific and industrial organizations.

Advantages of Participation

For high-tech companies

- development of technological solutions and creation of competitive products;
- innovative cycle reduction – time of the idea implementation into product;
- risk reduction of non-competitive products creation and manufacturing;
- attraction of competitive specialists for promotion of science-intensive products.

For venture and investment funds

- availability of implemented innovative projects which are ready for promotion on the market;
- availability of innovative projects with incomplete implementation stage;
- innovative developments “bank”;
- profitable fields of developments;
- guarantee of high-technological effectiveness and profitability of the invested developments;
- reduction of the invested funds pay-off period;
- potential of the large-scale end results implementation;
- interaction with the state on the governmental level.

And also:

- transparent interaction scheme between investor and project executers;

- control of investment funds target use;
- control of development and implementation process.

For scientists

- financial and technological conditions for realization and promotion of innovative idea on the market;
- royalty obtaining – remuneration for patented development use;
- popularity in scientific and business circles.

For faculties and departments

- preparation and graduation of highly qualified specialists with the experience of practical application of theoretical knowledge;
- development of scientific-laboratory base with the cutting-edge equipment;
- involvement of students and lecturers in innovative business.

For government on the national level:

- acceleration of Ukrainian economy innovative development ;
- ceasing of “brain drain”;
- increasing of the nation’s quality of life;
- increasing of foreign investments and export possibilities scale;

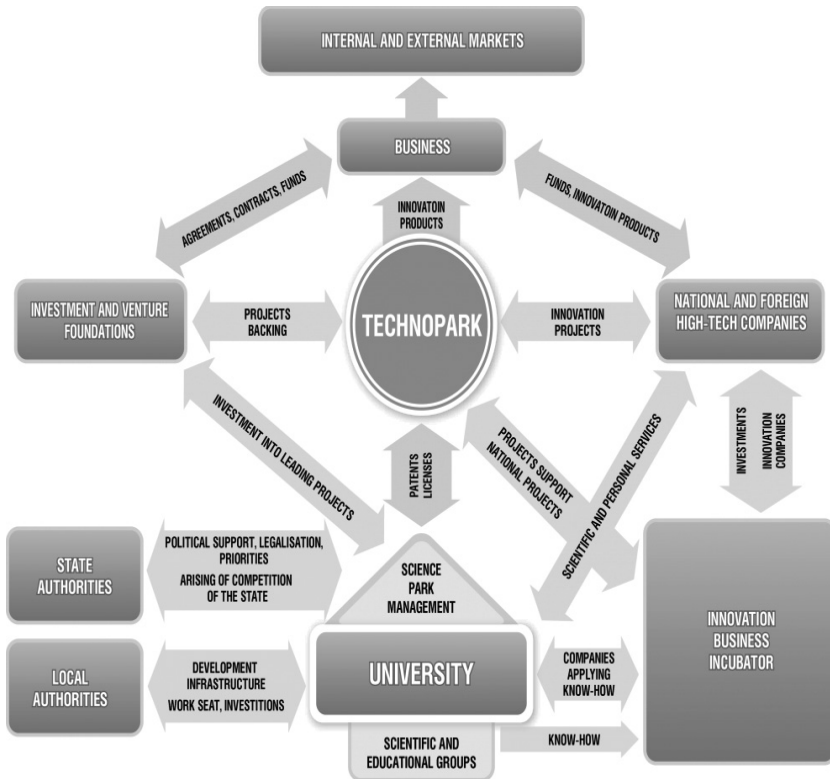
on the local level:

- appearance of new workplaces;
- increase of the nation’s income level;
- reinforcement of personnel component of the scientific-technical potential of the region;
- attraction of investments to the region;
- improvement of regional infrastructure.

Innovative projects of Science park “Kyivska Polytechnika”

- 1) Widespread usage of cleaner production technologies and environmental protection;
- 2) Technological modernization and development of agriculture;
- 3) Technology of energy transportation, introduction of energy saving technologies and alternative energy sources;

Figure 6.1



Interaction Scheme of the Science Park "Kyiv Polytechnic"

- 4) Technology of development of high-tech transport system, space industry, aircraft and shipbuilding, military equipment;
- 5) Development of modern information and communication technologies, robotics;
- 6) New technologies and equipment for quality health care, medical treatment, pharmaceuticals;
- 7) New technology of production of materials, their processing and connectivity, creation of nanomaterials and nanotechnology ind.

Business Incubator «Polyteco»

Youth IT Business Incubator “Polyteco” (hereinafter referred to as BI «Polyteco») – a project with the assistance of student entrepreneurial initiative, the basis of which is formed by progressive ideas in the sphere of IT.

BI “Polyteco” Mission

Education of the generation of initiative, professionally trained entrepreneurs, capable of getting involved into modern innovative sector of economy.

Urgency

For the youth of NTUU “KPI”

Desire to realize personal ideas and developments

High entrepreneurial activity

Lack of knowledge of practical (market) implementation of personal ideas

Interest in participation in the development of efficient strategies of market behaviour

For NTUU «KPI»:

The need of gained science-intensive ideas implementation in the sphere of IT

The necessity to train personnel, capable of technological breakthrough accomplishing

The prospect for NTUU “KPI” to become the centre of innovative activity and entrepreneurship

Strategic objectives

Creation of conditions for launching and commercialization of new and innovative ideas of students, postgraduates and young scientists of KPI in the sphere of IT

Education of students, postgraduates and young scientists how to manage projects in the sphere of IT

Establishing of the municipal youth innovation centre on the basis of BI “Polyteco”.

In the framework of the EU project “Support of knowledge based and innovative enterprises and technology transfer in Ukraine” at National Aviation University (Kyiv) was established science park “Aerospace innovative technology”.

In late 2010, together with scientific institutions of NAS of Ukraine (Institute of Archaeology, Institute of Bioorganic Chemis-

try and petrochemistry, O. Palladin Institute of Biochemistry, M. Semenov Institute of Geochemistry, Mineralogy and Ore Formation, O. Paton Institute of Electric Welding, Institute of History of Ukraine, G. Kurdyumov Institute of Metal Physics, D. Zabolotny Institute of Microbiology and Virology, Institute of Organic Chemistry, Institute of Applied Physics, I. Frantsevich Institute for Materials Science, Institute for Information Recording, M. Bogolyubov Institute of Theoretical Physics) and higher education institutions of IV level of accreditation (Taras Shevchenko National University of Kyiv and National University of Food Technologies) was founded Taras Shevchenko Kyiv University Science Park.

Today in Ukraine created more than a dozen science parks, among which successfully work such as SP "АНРОЕКО", SP "Поділля Innovation Development" and others.

List of recommended literature

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Reveals legal regulation in the commercialization of scientific and research and development work, substantiated principles of science parks activity as an important mechanism for the implementation of scientific research results, disclosed actual aspects of the EU program “Horizon 2020”, the strategic direction of scientific development in the European educational area.

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