Opinion of the European Economic and Social Committee on the Proposal for a Regulation of the European Parliament and the Council establishing the European Institute of Technology

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(2007/C 161/06)

On 20 December 2006 the Council decided to consult the European Economic and Social Committee, under Article 157(3) of the Treaty establishing the European Community, on the above-mentioned proposal.

The Committee instructed the Section for the Single Market, Production and Consumption to prepare its work on the subject.

Given the urgent nature of the work, the European Economic and Social Committee appointed Mr Pezzini as rapporteur-general at its 434th plenary session, held on 14-15 March 2007 (meeting of 14 March), and adopted the following opinion by 93 votes to two with one abstention.

1. Conclusions and recommendations

1.1 Top performances in the scientific and technical field, and their conversion into a competitive, economic force, are essential preconditions for safeguarding our future, for example with regard to nanotechnology, information society, energy and climate issues, preserving and improving our current global position, and developing rather than jeopardising the European social model.

1.2 The Committee has always welcomed any initiative aimed at:

— increasing the innovative capacity of the Community and the Member States;

— promoting an integrated approach to the knowledge triangle (1);

— consolidating links between academia and business;

— supporting all efforts to promote research and innovation;

— extending public-private partnerships in RTD;

— increasing SMEs’ access to new skills.

1.3 The Committee strongly and wholeheartedly supports the idea of creating an instrument such as the European Institute of Technology (EIT) with a view to contributing to the development of quality education, innovation and research by encouraging cooperation and integration between European centres of excellences in the field of industry, universities and science.

1.4 The Committee stresses the importance of developing the EIT proposal consistently with its legal basis, aimed in particular at ‘speeding up the adjustment of industry to structural changes, encouraging an environment favourable to initiative and to the development of undertakings throughout the Community, particularly small and medium-sized undertakings, encouraging an environment favourable to cooperation between undertakings, and fostering better exploitation of the industrial potential of policies of innovation, research and technological development’ (2).

1.5 However, the Committee believes that, if this new integrated knowledge, research and innovation instrument is to succeed, it must be able to differentiate itself and stand out from other, existing integrated Community instruments such as the European Technology Platforms, Joint Technology Initiatives, European Networks of Excellence, Integrated Projects, and European advanced masters schemes (3).

1.6 The Committee is aware that it would be inappropriate to make simplistic comparisons between the future EIT and an institute such as MIT in the United States, given that the latter was never a federal excellence project but rather a top-level university characterised by the presence of the ‘MIT Corporation’, supported by an investment management company. Yet the success of institutions like the MIT shows that excellence is the result of an evolutionary process based on the right principles and on sufficient support.

1.7 However, the Committee believes that if the future EIT wants to become a global performer and a world class player symbolising the harnessing of European excellence, it needs to go beyond merely integrating resources.

1.8 To this end, not only must its design, structure and form fully and coherently meet the objectives set out in the Treaty, which form its fundamental legal basis; they must also serve to develop a science- and technology-oriented culture of competence and excellence which attracts the best students and shapes the best scientists and engineers. This is a prerequisite for the creation of new knowledge and continuous innovation.

(1) Attaining knowledge through research, passing it on through education, and applying it through innovation.

(2) See Article 157 of the EC Treaty, which forms the legal basis of the Commission proposal.

(3) See, for example, EMM Nano offered under Erasmus Mundus, www.emm-nano.org
1.9 The Committee also believes that it is important not to stop at the idea of an internationally prestigious knowledge flagship (\(^\text{(1)}\)), but it needs the stamina of all engaged players to develop a signature of outstanding results characterising the individual Knowledge and Innovation Communities (KICs) to seek to bring about concrete results that impact on the market:

— in terms of transforming knowledge and research findings into real market innovations;

— thanks to the creation of new businesses at the forefront of competitiveness;

— attracting and creating experts of international standing;

— promoting new, stable, skilled jobs.

1.10 The structure and form of the Institute should be designed and set up in such a way as to:

— address the needs of European business and employment, strengthening efforts towards a knowledge-based society;

— be in tune with the economic and social dimension of the Community model;

— have a strong international flavour so as to be able to attract researchers and businesses from all over the world.

1.10.1 The joint undertaking formula could be given due consideration.

1.11 At the same time, at least the initial success of the EIT will heavily depend on sufficient funding by the Community and Member States, which, however, should not be diverted from the other adopted programmes for research and innovation.

1.11.1 The Committee believes that a number of factors will become increasingly important in the future EIT: firstly, the mechanisms for encouraging patents and the arrangements for managing intellectual property; and secondly, the ability to find sources of private financing, as these will need to play a much greater role than Community funds if resources are not to be diverted from other programmes, especially those for research and innovation.

1.11.2 As regards financial resources, the Committee thinks that provision needs to be made for initial funding from the Community, which could come from additional resources under the Mid-term review of the Seventh RTD Framework Programme, while a substantial part should come on a pro-rata basis from the Member States. Moreover, the possibility of activating EIB actions for innovation networks and university research should not be overlooked.

1.12 Just as important, in the Committee’s view, are the skills the Institute will be able to develop in the knowledge, innovation and research market so as to ensure gradually increasing interaction between the Institute itself and its branches, i.e. the Knowledge and Innovation Communities (KICs).

1.12.1 This could also take place through major public events organised by the EIT system and aimed at establishing a single brand of excellence with a network structure that draws in and passes on knowledge and innovation in a decentralised manner.

1.12.2 Innovation and success are the result of a delicate balance between goal-oriented procedures and individual freedom to develop new ideas and concepts to be carried into the test-area of competition. Compliance with standardised EU quality assurance requirements must underpin research, knowledge and innovation initiatives throughout the EIT network. Without market-driven interaction between research, innovation and industry, public-funded research will have only a limited impact on the economy.

1.13 The system for selecting networks of businesses, laboratories and universities as candidates for becoming KICs should, in the Committee’s view, work on the bottom-up principle and be based on clear and transparent criteria including professional success and excellence, skills and experience in transferring technologies, especially to SMEs.

1.13.1 In any case, the new KIC status should not be granted indefinitely, but rather be subject to periodic assessment of quality and of measurable results, notwithstanding the need for an appropriate build-up period.

1.14 The Committee also believes that the EIT system should aim — where appropriate — to incorporate selected centres of excellence that already exist in the EU, but avoid becoming a bureaucratic support superstructure for the centres of excellence that already exist in the EU; for this very reason, it should focus more on the industrial component and that of interdisciplinary research, both within its statutory bodies and in the selection bodies.

1.14.1 With this in mind, it would be appropriate to set up an EIT Investment Management Company, which would provide for a more innovative approach that could help redress the shortcomings that have so often been a feature of relations between industry, academia and research.

1.15 Finally, the Committee believes that more clarity is needed as regards the definition and awarding of EIT degrees by the KIC networks and the EIT itself. At least for a sufficiently extended initial period, awarding degrees should remain the prerogative but also the responsibility of those universities and/or technical universities (institutes of technology) of the Member States which are selected as partners within the individual KICs, their degrees being enhanced, once minimum conditions are fulfilled, by the EIT label.
1.16 The Committee feels that the awarding of the EIT label to KIC network degrees should be subject to the following conditions: that the studies and research have been carried out in at least three different institutes in three Member States (to give the degree a interdisciplinary European flavour), that they must have displayed sufficient impact potential in terms of innovation, and, lastly, that they are endorsed by the central EIT.

1.17 As regards the EIT Statutes, the Committee believes that it would be appropriate for the Administrative/Governing Board (1) provided for in the Commission proposal to be supported by a Monitoring Committee made up of representatives of the Member States and chaired by a Commission representative, an Executive Committee made up of two representatives each of industry, research centres and universities respectively and headed by the Chairperson of the Governing Board, a Director and a Rector.

2. Introduction

2.1 The mid-term report submitted to the European Council in Spring 2005 entitled Working together for growth and jobs: A new start for the Lisbon Strategy (2) defined fundamental principles for reinvigorating the Strategy, i.e. focused actions, broad ownership of the goals and clearly-defined levels of responsibility.

2.2 The elements supplementing the Lisbon Strategy included spreading knowledge through high-quality education systems. In particular, the Union must ensure that our universities can compete with the best in the world. However, this requires the completion of the European Higher Education Area, which will make it easier to build and disseminate knowledge throughout the EU.

2.3 To this end, the Commission stated its intention to moot the creation of a European Institute of Technology, and its commitment to enabling European universities to compete internationally, as ‘existing approaches to financing, governance and quality are proving inadequate to meet the challenge of what has become a global market for academics, students and knowledge itself’.

2.4 The Committee has commented several times on the issue (3). In its exploratory opinion on The road to the European knowledge-based society — the contribution of organised civil society to the Lisbon Strategy (4), it upheld the need to create a Common European Area of Knowledge, based on intensified cooperation in learning, innovation and research policies. Moreover, in this opinion the Committee called upon businesses, financial institutions and private foundations to shoulder their responsibilities and invest more in the knowledge-based economy, also supporting European public-private partnership (PPP) agreements.

2.5 In the United States of America, the Massachusetts Institute of Technology — MIT — set up in Boston in 1861, now has approximately 10 000 students and a teaching body of around 10 000 people working in a high-quality multi-disciplinary system, including economics, law, architecture, engineering, management techniques, mathematics, physics and biology. The MIT costs over USD 1 000 million per year, but in the ‘Shanghai Listing’, which enumerates the best universities in the world (5), it ranks fifth.

2.6 As regards Europe, by 2010 the Bologna process goals should have been achieved. The Bologna process is the initiative launched by the European Union in 1999 to harmonise the various higher education systems in Europe, with the aim of creating a European Higher Education Area and promoting the European higher education system internationally. The following objectives were set:

— adoption of a system of easily readable and comparable degrees;

— convergence of education systems, to be based on three main cycles (bachelor's degree, master’s degree, doctorate);

— consolidation of the credits system, based on the ECTS (6), under which credits can be obtained from different faculties;

— promotion of mobility (for students, teachers, researchers and administrative and technical staff), along with removal of the remaining obstacles to free movement;

(1) See footnote 28.
(4) Cf. the 2005 Shanghai Listing of the top 50 universities. Only four EU universities are in the top 30: 1 Harvard University USA, 2 Cambridge University UK, 3 Stanford University USA, 4 University of California — Berkeley USA, 5 Massachusetts Inst. Tech. (MIT) USA, 6 California Inst. Tech. USA, 7 Columbia University USA, 8 Princeton University USA, 9 University of Chicago USA, 10 Oxford University UK, 11 Yale University USA, 12 Cornell University USA, 13 University of California — San Diego USA, 14 University of California — Los Angeles USA, 15 University of Pennsylvania USA, 16 University of Wisconsin — Madison USA, 17 University of Washington — Seattle USA, 18 University of California — San Francisco USA, 19 Johns Hopkins University USA, 20 Tokyo University Asia/Pac, 21 University of Michigan — Ann Arbor USA, 22 Kyoto University Asia/Pac, 23 Imperial College London UK, 24 University of Toronto Canada, 25 University of Illinois — Urbana Champaign USA, 26 University College London UK, 27 Swiss Fed. Inst. Tech. — Zurich Switzerland, 28 Washington University — St. Louis USA, 29 New York University USA, 30 Rockefeller University USA.
(5) European Credit Transfer and Accumulation System.
— promotion of European cooperation in quality assurance;

— promotion of an essential European dimension in higher education, concerning syllabuses, cooperation between universities and other higher-education institutions, mobility; integrated programmes, training and research.

2.7 On 26 September 2006, the European Parliament adopted a resolution on the creation of a European qualifications framework (1), taking into account the Bologna process and the 2002 Copenhagen process and based on facilitating enhanced European cooperation in the field of vocational education and training, with a number of specific goals (1).

2.8 In 2005, the Commission published the second report on Progress towards the Lisbon objectives in education and training (1). This stressed, inter alia, the difficulty of raising the number of graduates in Europe, the need to update and supplement knowledge, skills and qualifications throughout working life through advanced lifelong learning systems and, lastly, the need to increase public investment in higher education and training, supplementing it with private investment, and to train enough high-calibre, highly-skilled academic and teaching staff to replace older workers (around 1 000 000 people between 2005 and 2015).

2.9 In 2006, an OECD survey was carried out from the demand perspective (1). Entitled the Programme for International Student Assessment (PISA) (1), it provides a general framework of students' characteristics, attitudes and ability to use the knowledge they have acquired.

2.10 The European university educational system's weaknesses seem to have four main causes (1):

— excessive uniformity: insufficient flexibility and diversity to meet new requirements;

— insularity: all too often, universities are in an ivory tower, with inadequate links to business and society;

— over-regulation: all too often, universities cannot modernise due to national regulations;

— under-funding: with both research and education-and-training spending lagging behind its competitors, the EU would have to spend EUR 150 billion per annum to bridge the gap — i.e. more than the entire Community budget (1).

2.11 The main general problems which could be resolved by creating a European Institute of Technology (EIT) are as follows:

— low levels of investment in higher education and R&D and lack of concentration of investment in communities of excellence which can compete internationally;

— inadequate tools and conversion of knowledge and R&D outputs into competitive economic activities and jobs, compared with the EU's major competitors;

— models of governance and organisation of European research and higher education bodies which are not innovative enough and often inflexible and over-regulated;

— lack of an integrated approach to the 'education/research/innovation' triangle;

— insufficient ability to attract and retain the best teachers and students.

2.12 In its resolution on the 2007 annual budget, while the European Parliament welcomed the idea of strengthening the capacities of the knowledge triangle (education, research and innovation) and reinforcing the links among them, it was sceptical regarding the setting-up of a new European Institute of Technology, which it believed 'may undermine or overlap on existing structures and may therefore not be the most effective use of funds in this context' (4).


(2) Copenhagen process goals:

— a single framework for transparency of competences and qualifications (European CV, certificates, diplomas, Europass-Training brand etc.);

— a system of credit transfer for vocational education and training, similar to the ECTS in higher education;

— common criteria and principles for quality in vocational education and training, structured around a core of common criteria and principles for quality which could serve as a basis for European-level initiatives such as quality guidelines and checklists for education and training;

— common principles for the validation of non-formal and informal learning, in particular to ensure greater compatibility between approaches in different countries and at different levels;

— a European dimension of information guidance and counselling services, giving citizens improved access to lifelong learning.


(4) On 2 October 2006 the OECD published the 2009-2015 programme framework, which incorporates three new areas of research:

1) the measurement of learning progress over time and the comparison of progress across countries;

2) the relationship between aspects of instruction and learning outcomes;

3) the assessment of ICT competences, as well as the use of technology as a means to capture a broader range of assessment tasks.


(6) See 'Can Europe close the education gap?' — Friends of Europe 27.9.2005.

(7) The 2006 EU Budget totalled EUR 121.2 billion: of this sum, EUR 7.9 billion were allocated to competitiveness, including EUR 0.7 billion for education and training.

2.13 For its part, however, the European Council of 15-16 June 2006 stressed that the European Institute for Technology (EIT), working with existing national institutions, will be an important step towards filling the existing gap between higher education, research and innovation together with other actions that enhance networking and synergies between excellent research and innovation communities in Europe. It invited the Commission to prepare a formal proposal for its establishment. In response to this invitation, in November 2006 the Commission issued the proposal addressed by this opinion (19), which follows on from its two previous Communications on the matter (20).

2.13.1 Since then, the December 2006 European Council confirmed the favourable attitude previously expressed.

3. The Commission proposal

3.1 The concept underlying the Commission’s Proposal for a regulation setting up the EIT is that the EIT can contribute to industrial competitiveness, strengthening the Member States’ and the EU’s innovation capacity. The proposal’s goals are to:

— contribute to improving the competitiveness base of the Member States by involving partner organisations in integrated innovation, research and education activities in line with international standards;

— promote innovation through trans- and inter-disciplinary strategic research and education in areas of key economic or societal interest;

— build a ‘critical mass’ of human and physical resources in these fields of knowledge, attracting and retaining private sector investment in innovation, education, and R&D, as well as students at master’s level, doctoral candidates and researchers;

— become a symbol of the integrated European Innovation, Research and Education Area;

— become a reference for managing innovation and a model for the modernisation of higher education and research institutions in the EU;

— build a global reputation and provide an attractive environment for the best talents worldwide, remaining open to partner organisations, students and researchers from outside the Union.

3.2 The Commission proposes to give the EIT a two-level integrated structure, which combines a bottom-up approach with a top-down approach, as follows:

— the EIT itself, under the direction of a Governing Board. The EIT, a legal entity, will be made up of the Governing Board, assisted by a very small number (60 people) of scientific and administrative staff. The Governing Board will be composed of a group of 15 members representing enterprise and the scientific community, and an additional four members representing the staff and students of the EIT and the KICs (see below). Moreover, a supervisory Executive Committee, a Director responsible for day-to-day management who is the legal representative, and an Audit Committee are also provided for under the EIT’s statutes, annexed to the proposal.

— Knowledge and Innovation Communities (KICs), based on a network approach. KICs are consortia of partner organisations representing universities, research institutes and businesses, who form an integrated partnership in response to invitations from the EIT to submit proposals. KICs’ internal organisation is highly autonomous to enable them to achieve the objectives set on a contractual basis with the EIT.

3.3 The EIT’s general budget for 2007-2013 is estimated at about EUR 2 367.1 million, coming from:

a) External and internal sources, including Member States’ and regional and local authorities’ contributions; private-sector contributions (companies, venture capital, banks, including the EIB); resources resulting from its own activity (e.g. from intellectual property rights); resources from the donations and endowments that the EIT may accumulate;

b) Community sources: EC budget, from unallocated margins (EUR 308.7 million), Structural Funds, 7th RTD Framework Programme, the EU Lifelong Learning Programmes, the CIP (Competitiveness and Innovation Programme).

4. General comments

4.1 The Committee has always welcomed moves to boost the innovation capacity of the EU and the Member States, advocating an integrated approach to the knowledge triangle, particularly linking the academic world and enterprise. It is firmly in favour of ensuring better coordination of research, boosting innovation and education in the EU, achieving a more effective public-private partnership in the area of R&D and providing better access for small and medium-sized businesses to new skills (21).

4.2 However, the Committee cannot deviate from the three key principles underlying the reinvigoration of the Lisbon Strategy:

— the need for strong support for the most focused European initiatives;

— broad ownership of the goals;

— clear definition of levels of responsibility.

4.3 The Committee therefore believes that there needs to be careful consideration of how the EIT initiative ties in with the many other initiatives under way, which are based on various other policies such as research, enterprise, regional development, information society, education and culture.


(19) OJ C 120 of 20.5.2005, rapporteurs Mr Vever, Mr Ehnmark and Mr Simpson.
4.3.1 The Committee believes that in order for the future EIT to become a point of reference and a symbol of European excellence, it needs to go beyond merely integrating resources. Instead, it must be designed and structured so as to meet the objectives set out in the Treaty, which form its fundamental legal basis.

4.3.2 The Committee emphasises that a key to the success of the future EIT will be its ability to market a single brand of excellence with a network structure that draws in and passes on knowledge and innovation in a decentralised manner.

4.4 The Committee agrees that the EIT’s structure should be as simple as possible, flexible and dynamic, so that it can cater for new demands, and believes that the possibility of setting up a joint undertaking should be explored (22). However, it stresses that this structure must be oriented towards businesses and employment and that it is essential for it to focus on its stated primary objective, which is to convert R&D results into market opportunities.

4.4.1 To this end, the selection criteria for the Governing Bodies should be based not just on scientific excellence but on ability to attract innovative capital, create start-ups, generate and exploit patents and attract public/private financing, not to mention SMEs.

4.5 The Committee believes that this approach should be reflected in the selection criteria for KICs, whose consortia must remain open, in line with the priorities for the multi-annual Community programming for research and innovation, so as to facilitate involvement of smaller businesses and bodies, ensuring the greatest possible flexibility and minimum red tape.

4.5.1 The requirements for KICs need to be better defined:

— they must have a European dimension — incorporating new bodies from at least three Member States;

— the level of expertise must reflect the level of excellence required for the EIT itself;

— they must be sufficiently interdisciplinary; their membership must strike the right balance between the three defining elements of the research, knowledge and innovation triangle;

— the balance between the public and private components must be respected; the individual partners must have demonstrated the capacity, over the previous five years, to deliver excellence in the areas of research, knowledge, patents and technology transfer;

— a unified plan of joint activities must be submitted in a programme covering at least five years.

4.6 In order to promote a European Area of Knowledge, as part of the Lisbon strategy, it will be necessary to create incentives to promote mobility between the various white-collar professions and between the public and private sectors so as to facilitate movement between the different senior and middle management jobs, between researchers and engineers, and between the institutional and private sectors (23): mobility on a European scale must be a key part of training, research and technological applications programmes.

4.7 The Committee notes that initial funding for EIT activities appears to be very limited, while it seems that future resources will be directed towards conventional programmes (24) and draw on the already depleted funds of the 2007-2013 budget in the area of research, innovation and education. The EIT will thus be competing with other tried and tested integrated-approach instruments such as the IPs (Integrated Projects), NoEs (Networks of Excellence) and other more recent instruments such as the JTIs (Joint Technology Initiatives) and the ETPs (European Technology Platforms).

4.7.1 The funding provided for the Seventh RTD Framework Programme, for the period 2007-2013, which represents about 5.8 % of the overall EU budget, is already inadequate to support policies to incentivise research. Therefore, resources cannot be diverted from this except through the normal tendering process, in which the EIT and the KICs should be able to compete on a level playing field with other participants.

4.7.2 At least the initial success of the EIT will heavily depend on sufficient funding by the Community, which, however, should not be diverted from the other programmes adopted for research and innovation: indeed, the Commission’s estimates for the period 2007-2013 for the entire EIT system seem to be too low while Community funds from budget surplus are negligible. The Committee feels that one solution might be a joint undertaking (under Article 171 of the Treaty), where the Member States concerned participate directly (cf. the formula used for the Galileo joint undertaking) (25).

(22) Cf. Article 171 of the Treaty.
4.7.3 In the Committee’s view, the initial funding necessary could come from additional resources under the Mid-term review of the Seventh RTD Community Framework Programme; these funds should be in addition to direct contributions from Member States made on a pro-rata basis.

4.7.4 An additional source of funding could be EIB activities under the Innovation 2010 Initiative (i2i) and the EIB action for university research and university networks.

4.8 Community R&D policy also needs more systematic monitoring of all factors that limit the mobility of researchers, which is currently hindered by the differences in arrangements for recognising academic qualifications, as well as those for taxation, insurance and social security.

4.9 In the Committee’s view, if the EIT aims to be a world-class operator in its field capable of inspiring better performance by other European actors and networks in the knowledge triangle, it will have to be able to attract substantial private funding, which will, over time, have to become its main source of finance.

4.10 A major factor here may be the solution found to intellectual property protection issues, which may warrant further clarification in the proposal, as do the issues relating to the definition and awarding of EIT degrees.

4.11 The Committee believes that more clarity is needed as regards the definition and awarding of EIT degrees by the KIC networks and the EIT itself.

4.11.1 For a sufficiently long initial period, awarding degrees should remain the prerogative and responsibility of Member States’ universities and/or polytechnics which have been selected as partners within each KIC. However, even in this initial period, the awarding of degrees should comply with specific minimum requirements.

4.11.2 The requirements could include the following elements:

— the studies and research must have been carried out in at least three different institutes in three Member States, to give the degree a European flavour;

— they must have displayed sufficient impact potential in terms of innovation, and they must have been endorsed by the central EIT.

4.12 As regards the EIT Statutes, the Committee believes that there should be an Administrative Board, with the same membership as that of the Governing Board provided for in the Commission proposal — five representatives of business, five representatives of public and private research centres and five representatives of public and private universities, and an additional four members representing the staff and students of the EIT and the KICs and chaired by a Commission representative. This would be supported by:

— a Monitoring Committee made up of representatives of the Member States and chaired by a Commission representative;

— an Executive Committee made up of two representatives of business, research centres and universities respectively and chaired by the Chairperson of the Administrative Board;

— a Director and a Rector, appointed — and dismissed — by the Administrative Board, after receiving the assent of the Monitoring Committee.

4.12.1 If the joint undertaking formula is adopted for the EIT, the administrative and scientific staff of the joint undertaking should have fixed-term contracts based on the conditions of employment of other servants of the European Community.


The President
of the European Economic and Social Committee
Dimitris DIMITRIADIS

(26) Cf. the Sirarebi and Eiburs programmes and EIB University Networks.
(27) See footnote 22.
(28) This makeup must also ensure adequate representation of the social partners.