

**STRATEGY PROPOSAL FOR THE DEVELOPMENT OF THE
HUNGARIAN NATIONAL EDUCATION SECTOR INNOVATION
SYSTEM**

Executive Summary

Budapest
January 2011

Institute for Educational Research and Development

carried out within the framework of the project TÁMOP-3.1.1-08/1-2008-0002

Introduction

This document contains a summary of the “Strategy Proposal for the Development of the Hungarian National Education Sector Innovation System” (hereinafter referred to as “*Strategy Proposal*”) formulated to help the development of the *National Education Sector Innovation System* (NESIS).¹ The starting point of the *Strategy Proposal* is that countries with advanced education sector research, development and innovation systems are able to make their education systems much more effective and efficient than those countries which fail to recognise the importance of developments in this field. The target group of this document primarily includes those professionals who are actively involved in the creation, dissemination and application of knowledge used for improving education (e.g. policy makers, researchers, designers of development programmes and practitioners implementing such programmes) and also any other participants of the education system who place importance on increasing the effectiveness and efficiency of education.

In the context of the *Strategy Proposal*, the NESIS is understood as a sector specific subsystem of the *National Innovation System*, which represents the institutional framework of creating, sharing and using new knowledge with a view to improving education. The system components of the NESIS are: theoretical and applied *research* aimed to the improvement of education, *development* focusing on practice, *innovation* carried out within the education system, and *knowledge management*. This framework intends to provide opportunities for the specific *actors* in the NESIS for *interaction* with one another as part of their work and for developing the *standards* and *institutions* which are also part of the system.

The background of developing the *Strategy Proposal* includes in particular the following:

- Hungary has been carrying out major development programs supported by the European Structural Funds since 2004;
- As part of its overall *innovation strategy*, the OECD embarked on the development of an innovation strategy for the education sector after 2007, and Hungary has decided to join this effort;
- There have been significant changes in the relationship between education and economy over the last decade (in particular, the emergence of the Lifelong Learning (LLL) paradigm, a shift towards decentralisation, and the evolution and growth of the so-called knowledge industry, which increased the value of innovation in the education sector.

It should be emphasised that the *Strategy Proposal* has been developed (only) for the innovation system which supports improvements in the education sector, and not for the education sector as a whole. In contrast to the usual question (i.e. “How can the education sector support innovations in other sectors?”), it seeks answers to how innovation capacity can be developed within the education sector itself. The *Strategy Proposal* is built upon the priorities of the general global innovation strategy formulated within the OECD framework, in particular the following:

¹ The full text of the *Strategy Proposal* and its background materials are available on the website of the project launched for the development of the *Strategy Proposal* at: <http://tamop311.ofi.hu/szakmai-program/8-piller/8-1>.

- empowering people to innovate,
- unleashing innovative energies,
- improving knowledge creation and application,
- applying innovation to address global challenges,
- improving the governance of innovation systems and the measurement of innovation.

The *Strategy Proposal* has been developed in the framework of a priority project designed under the Social Renewal Operational Programme (TÁMOP) of the New Hungary Development Plan with the title “*21st Century Public Education – Development, Coordination*”.² This priority project included a project for the “*Analysis and Strategic Development of the Education Sector RDI System*”, whose main objective was to formulate a strategy proposal. The project was built upon the following concrete activities:

- a kick-off roundtable with the involvement of experts representing education, economy and some other academic fields;
- a detailed conceptual framework discussed and adopted by the steering group of professional advisors;
- collection and analysis of extensive data on the state and development processes of research, development and innovation in Hungary;
- overall assessment of educational research in Hungary with the involvement of an international expert;
- studies on the innovation processes of other sectors;
- studies on those fields within education which may be relevant to innovation;
- case studies on public and private sector organisations with a successful track record in knowledge and innovation management;
- a knowledge map drawn on the basis of a large sample survey.

The above were discussed in thirteen professional exchanges, of which detailed professional summaries are available.

The *Strategy Proposal* was prepared by a group of eleven experts drawing up on the above. The *Strategy Proposal* has five chapters:

1. The chapter on “*The National Education Sector Innovation System*” clarifies the conceptual framework and defines the concept of the NESIS;
2. The chapter on “*The features of the Hungarian National Education Innovation System*” contains an analysis of the current situation, including a SWOT analysis.
3. The chapter on “*Strategic goals and priorities*” sets out those overall goals of developing the NESIS which the proposed strategy should help to achieve.

² Priority Project TÁMOP 3.1.1. was implemented by a consortium which was led by Educatio Nonprofit Kft. and involved the Hungarian Institute for Educational Research and Development (OFI). The *Strategy Proposal* is one of the products of Project 8.1., which belongs to Pillar 8 “R&D Activities Supporting the Systemic Development of Knowledge Management; Supporting Innovation” of the programme component implemented by OFI.

4. The chapter on “*The proposed fields of strategic intervention*” is the most important part of the *Strategy Proposal*, and it details the priorities or key fields of intervention described in the previous chapter, as well as the specific interventions proposed for these fields.
5. The chapter on “*Proposals for the implementation of the strategy*” formulates principles and specific recommendations in relation to the implementation of the strategy in practice.

The National Education Sector Innovation System (NESIS)

The term '*innovation*' is used in the *Strategy Proposal* as it is defined in the Oslo Manual.³ According to that definition, innovation is "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations". In this context, the concept of *educational innovation* is introduced and defined in the *Strategy Proposal* as a special form of *innovation* which *takes place mostly in the public sector* and partly belongs to the field of *social innovation*. The definition of the NESIS used in the *Strategy Proposal* is based on the concepts "*national innovation system*" and "*sectoral innovation system*", which form the basis of modern thinking about innovation. Accordingly, innovation is viewed as an *iterative and circular* process with a focus on *interactions* and *mutual learning*. Special attention is given to the concept of *development*, which is related partly to *development policy* and partly to *experimental development*, as well as to the concepts of *evidence based policy and praxis*. In connection with the latter, the *Strategy Proposal* emphasises the importance of an approach whereby professional and policy decisions are based on thoroughly verified facts and attempts are made to develop a standardised scale for measuring the level of verification. Another key concept is *knowledge*, and the *Strategy Proposal* highlights the significance of non-explicit or non-codified (tacit) knowledge. Using the concept of a sectoral innovation system raised the issue of how to define the boundaries of the education sector. The *Strategy Proposal* uses the term '*education sector*' in a broad sense, extending the scope of education beyond all forms of formal learning to less formal ways of learning, such as self-development by using educational services available in the market, organised learning at work, and community based or civil forms of learning. This means that all types of services which can be related to some form of learning are considered to be part of the education sector.

In the context of the *Strategy Proposal*, the NESIS is viewed as an organically developing system made up of *actors* (organisations, institutions, groups and individuals) and a combination of *links* and *processes* among them. It is emphasised that the boundaries of the NESIS, similarly to the education system and the national innovation system, cannot be defined precisely. However, this is not treated as a theoretical issue in the first place (i.e. whether and to what extent the NESIS can be described as a genuinely separate *system*), but as a reason for asking practical questions, such as how the system can adapt to its environment and respond to the challenges in that environment, and what policies can help such adaptation and responses. The *Strategy Proposal* applies to the NESIS the model of dynamic interactions between relevant actors, as it is known from innovation theory. In this context, the *Triple Helix* model of innovation is interpreted by replacing scientific research and development in general with research and development activities *focusing on the education sector*, economic actors with *educational actors* (schools, universities, educational enterprises, etc.), and government with the government agencies which are responsible for *the education sector* and the research and development activities *servicing the education sector*.

³ Detailed explanations for the terms and concepts used in this document can be found in the Glossary of the *Strategy Proposal*.

Partly based on the relevant international literature, the *Strategy Proposal* highlights the following potential factors fostering innovation in the education sector:

- innovation efforts of educational actors,
- educational research,
- intersectoral and interdisciplinary relationships,
- dissemination of unusual organisational solutions,
- information and communication technology (ICT).

Features of the Hungarian NESIS system

The *Strategy Proposal* points out the problem that most Hungarian innovation strategies pay little attention to innovation in the public sector and do not deal with innovation in the education sector at all. This may jeopardise the effectiveness of the national innovation system as a whole, because a sector which is not open for innovation can hardly support the national innovation system adequately. The document underlines that – compared to other countries – not only R&D expenditure as a percentage of the GDP is very low in Hungary, but also the proportion of R&D spending for the benefit of the education sector.

The analysis of the current situation included in the *Strategy Proposal* reminds that globalisation has also reached education over the last two decades, and the interest of economy in education has grown considerably. It emphasises the weight of the ICT revolution, which has fundamentally changed the environment of education and, among other things, has increased the value of the presence of (corporate) actors with an interest in the production, development and distribution of IT devices/technologies.

The analysis reveals that the environment of the Hungarian NESIS has changed significantly over the last decade. The amounts of funds which have become available for development policy – under the National Development Plan (NFT), the New Hungary Development Plan (ÚMFT), the Social Renewal Operational Programme (TÁMOP) and the Social Infrastructure Operational Programme (TIOP) – have restructured the links of the Hungarian NESIS and development policy. With EU funds and priorities gaining ground against national funds and priorities, traditional educational research and development objectives have been pushed to the background by national development policy objectives. The special mechanisms of absorbing EU funds (e.g. retrospective financing, public procurement, delay in payments) pose serious challenges to Hungarian innovation practitioners in the education sector. In this context, the Hungarian practice of development policy is not free of problems, which is shown by the fact that – paradoxically – forces fuelling innovation can be observed simultaneously with those which undermine the innovation potential and energy.

The internal features of the Hungarian NESIS have been implicit and *ad hoc* in nature over the last years. The participants of the system are characterised by high activity, openness for innovation and international embeddedness (which is partly attributable to European level impacts), as well as lack of cooperation, the isolation of different institutional spheres, and sharing knowledge at a low level. There is also a scarcity of human resources RDI processes could build upon.

From the perspective of activating the NESIS, there is some unexploited potential hidden in the various actors of the learning industry, such as educational organisations operating as enterprises, companies developing and marketing educational technologies, and organisations providing organisational development and HR services. In spite of the unfavourable trends, networking has received serious momentum, which can be recognised as a major result. For the time being, professional organisations are in the forefront in this respect, and considerable developments have begun in the field of technologies supporting learning – primarily in vocational training and education.

The knowledge map drawn as part of developing the *Strategy Proposal* shows a serious lack of knowledge or an insufficient quality or exploitation of knowledge in some important fields. Knowledge transfer is impeded by the limitations of professional publicity and the financing and operational problems of professional journals and other forums.

According to the SWOT analysis included in the analysis of the current situation, the favourable and the unfavourable internal and environmental factors (i.e. strengths, opportunities, weaknesses and threats) are more or less in balance, which indicates that both the internal and the external conditions required for consciously developing the NESIS and for realising the potential of the system are given.

Strategic objectives and priorities

The *Strategy Proposal* sets out several principles which should be followed if a strategy is to be developed and implemented successfully. For example, one of these principles is that the stakeholders should have ownership over the strategy and see it as an effective framework for action. Another principle is that the strategy as a whole should be able to activate the potential actors and the interactions between them. Furthermore, the NESIS should create new knowledge in relevant fields, ensure the effective exploitation of knowledge in practice, support social problem solving and improvement in all important fields within the education sector, and at the same time unleash the innovative energies of all stakeholders. Moreover, the national innovation system should empower the education sector, as a participant of the so-called *Triple Helix* or knowledge triangle, to effectively support the national innovation system, while ensuring the existence and efficient use of resources for innovation in this sector and the adequate quality of the new knowledge and the emerging innovations. The principles also include the strengthening of the following: policy and teaching practices based on evidence and the available best knowledge; advanced forms of knowledge production and transmission; and interdisciplinary and international knowledge transfer.

The principles also include that the conditions of feasibility should be in focus. In this context, the *Strategy Proposal* sets out a number of principles related specifically to implementation, which are also the subject-matter of the last chapter of the document. Here, one of the important aspects is that any development of the NESIS should build upon existing actors, organisations, institutions, partnerships and mechanisms, trying to add new elements to these and bringing them together into a system. The strategy should combine top-down and bottom-up approaches, giving preference to the latter whenever possible. According to the principles of implementation, the implementation of the strategy should be understood as a learning process which enables continuous adjustments. Timing has outstanding importance (with particular regard to the fact that no step is good or bad in

itself, but the existence of certain conditions will make it good or bad). These can be effectively supported by thinking in complex systems and eco-systems.

Based on the analysis of the current situation, the document identifies five priorities and formulates proposals for the specific actions to be taken under these priorities:

- Developing regulatory, institutional and organisational frameworks;
- Improving human conditions;
- Ensuring quality;
- Improving knowledge management;
- Exploiting the potential of technological development.

The above priorities, their place within the NESIS and the links of the NESIS to the overall educational development objectives are illustrated in the Appendix of this document.

Proposals for the specific measures to be taken

Developing regulatory, institutional and organisational frameworks

In the field of developing regulatory, institutional and organisational frameworks, one of the main objectives is apparently to supplement the national innovation strategy. This can clarify the responsibility of the Ministry of Education for supporting, *inter alia*, research and development aimed to improving the effectiveness of the education sector. Developing and operating institutional mechanisms to enable the development of solutions or compromises which are acceptable for all stakeholders – including the research community, education policy makers, practitioners, the participants of the brokerage sector, the groups responsible for the implementation of development policy programmes, and other stakeholders – are also inevitable. At the same time, opportunities should be given to the education *market participants* – in the broad sense – for joining and actively participating in the decision making process.

One important objective related to the development of national and sectoral innovation systems is to ensure *effective governance*, which makes it necessary to map all institutions, organisations, participants and resources of these systems. This exercise should involve drawing a *map of organisations* and/or refining or supplementing it with new details. It would be important to carry out a *comprehensive review of sector specific regulations* from the perspective of innovation. This would provide a basis for making proposals firstly for the necessary amendments of the existing regulations, so that they can help innovations to emerge and spread, and secondly for the ways of ensuring the quality of innovations.

Another proposal related to the development of institutional and organisational frameworks supporting effective operation is to *create a network* of educational research and development centres, which should work in a coordinated manner and receive funding under a separate chapter within the state budget. In this respect, two factors need special attention:

- The evolving organisational structure should not become exclusive and hardly accessible for outsiders (publicity and public communication can help to avoid it);

- The institutionalisation of brokerage between research and practice should be promoted, and this function must have a place in the work of the proposed national network of institutions conducting educational research.

The implementation of the above is not a goal in itself, but a means of enabling the creation of a *research infrastructure* which is essential for research and development to be competitive. Among the proposals for the institutional and organisational framework, special emphasis is given to the ones concerning *higher education*. According to the *Strategy Proposal*, support should be made available to all institutional forms which enable the development and operation of *networks functioning as communities of practice* or the creation of learning organisations.

As described above, the NESIS receives funding through several channels. In this case, the most important specific objective seems to be the introduction of a *funding model* which would be built upon international experiences and an open programme/basis clearly reflecting and taking into account the objectives and principles related to the sector specific priorities. This would enable the implementation of important surveys to obtain data which can significantly strengthen the knowledge base of decision making in education. Subject to the applicable policy objectives, these surveys may focus on the following:

- institutions (schools and higher education institutions, including their research and development units),
- local authorities,
- general population (with separate parent surveys),
- students (including graduates),
- teachers, trainers, academic staff,
- employers.

Improving human conditions

The effectiveness of the NESIS mainly depends on the quality of the human resources available in the system. The human resources of the NESIS are primarily those *professionals* who perform research and development work in universities, research institutes, development centres and advisory or knowledge transfer organisations. Those in the governmental sphere of the *Triple Helix* model, such as public funders of research and development or regulators of the innovation system, should not be ignored either. Finally, practitioners are also important participants in the innovation system, in particular as users of R&D products.

Development tasks are not easy to define without systematically and thoroughly mapping human resources. Again, development should be underpinned by data collection and reflection on how educational research and development can become an attractive and prestigious activity. This would require attractive *career models*, as well as the *development of competence standards* for the selection, development and assessment of professionals. In this field, the focussed development of doctoral schools, the extension of international relations and increased attention given by market participants (publishers and providers of learning materials, enterprises engaged in educational technology development, consulting firms, non-governmental development agencies) to the professional development of their staff performing RDI and knowledge management functions may have great significance.

Major intervention is needed for the development of those NESIS participants who are carriers and often sources of new knowledge, but do not perform R&D functions as professionals. This group includes the majority of teachers and trainers working in educational institutions. Consequently, both the initial and the in-service training of teachers should be reconsidered from the perspective of innovation, with particular regard to developing the R&D skills, toolkit and attitude of teachers and teacher candidates. Improving their openness, willingness and capacity for innovation is also vital. Special attention should be paid to higher education, which is affected by innovation interventions to a lesser extent than public education, and therefore R&D activities which are practical, classroom-based or linked to training programmes can be particularly useful.

In connection with human resource development, the *Strategy Proposal* highlights the issues of leadership and organisational development. Supporting organisational innovations should be a key objective of education sector innovation policy. This would require a monitoring system and research efforts which enable the *mapping of organisational innovations* within the education system and the exploration of how such innovations are transferred. Adequate documentation of successful organisational innovations is needed to provide access to such innovations by others and to facilitate dissemination. Strengthening these would require supporting the efforts of those institutions which address the issues of innovation and knowledge management at strategic level. This would demand resources that can be mobilised at institutional level.

Ensuring quality

The actions proposed for the third strategic priority are based on the analysis of the current situation, in particular the finding that one of the key problems of the NESIS is the inability to appropriately ensure the quality of research, developments, innovations and the created new knowledge. The document identifies four fields of intervention under this priority: (1) strengthening the quality assurance and assessment function, (2) linking quality policy and innovation policy at sectoral level, (3) defining quality by taking into account the needs of practice, and (4) realising the potential of international cooperation in terms of quality.

Regular assessments of the overall functioning of the NESIS are essential. There are a number of solutions to achieve this. In particular, in addition to the publication of different reviews/reports, the academic community should consider the monitoring of educational research and development trends a permanent responsibility. General *R&D standards and protocols* which are accepted by professional organisations and can be taken into account for designing educational research and educational development programmes also need to be developed and continuously improved. Special attention should be given to the development of indicators for evaluating the impact of RDI processes and development interventions, and these indicators should also be incorporated into educational information systems. It would be necessary to develop *information systems* for managing data on educational innovations, with special regard to the recording of emerging innovations.

Unless there is a *link between quality policy and innovation policy at sectoral level*, different efforts may easily become forces working against each other. It would be useful to consider how to reinforce those impacts of system and institutional level quality management which may foster innovation (e.g. by weakening bureaucratic arrangements which impede innovation and strengthening the functions which foster innovation). A *sector specific innovation award* would be very helpful in this respect.

In the case of research and development, special attention should be given to ensuring that *efforts to guarantee quality remain consistent with the requirement of meeting the needs of practice*. Those who use the research

findings in practice should be involved, as much as possible, in the planning, implementation and evaluation of the results of research activities. To this end, much more support should be given, among many other things, to *action research*.

Sectoral innovation processes should have a broader *international dimension*, and working towards this would also provide a good opportunity for ensuring the quality of the created products. In general, the Hungarian educational research and development system as a whole should be encouraged to co-operate closely with European and global educational research and development communities in order to increase the efficiency of the exchange of knowledge.

Improving knowledge management

The *Strategy Proposal* explains at several points why communication among the participants of the knowledge triangle is important and why that communication needs to be dynamic. Moreover, the exchange of knowledge should be extended to and work effectively in the case of alternative forms of knowledge, including those which are embedded in practice. The quality and efficiency of relationships between national and international actors may be a key to closing the global and local knowledge gaps indicated by the completed knowledge map. If these relationships function at low efficiency, there is not much chance for closing the local knowledge gaps, as a result of the accidental nature of international knowledge transfer. At the same time, the possibility of adding new forms of co-operation to the existing ones in the future may have great significance. For example, co-operation among the educational research and development institutes operating in the Central European region would facilitate the creation and exchange of relevant knowledge in this region. Support should also be given to the traditional ways of dissemination, i.e. the publication of research findings in print and electronic form. Furthermore, the *Strategy Proposal* argues for supporting other forms of co-operation in the field of innovation which work well in other sectors and may be introduced in the education sector or the learning industry, in particular *clusters* which enable institutional co-operation between the participants of the education sector and those universities, research institutes and knowledge providers that may be interested in the improvement of processes in the education sector. As always, the objective to help the evolution of such *knowledge centres* in the education sector where the different representatives of the education sector may act both as providers and recipients of knowledge and may even alternate these roles, as appropriate. This would ensure the accessibility and transferability of those types of knowledge within the system whose source is not academic research (e.g. good practices). In other words, one measure of the effectiveness of the NESIS is its ability to ensure the exchange, dissemination and thus exploitation of many forms of knowledge. This may also contribute to the renewal of the content and methodology of teacher training and professional development.

The NESIS is a multi-actor system which means that knowledge exchange forums existing (or having significance) at the national and local levels have increased value, and media communication plays a key role. Knowledge exchange also increases the demand for the development of educational technologies, which is the fifth priority of the *Strategy Proposal*.

Exploiting the potential of technological development

The *Strategy Proposal* uses the concept of teaching and learning *technologies* in the broadest sense possible, including any solution with technological content or of technological nature, as well as any way of organising

teaching and learning applied by educators in the everyday practice of teaching and learning, and any tool based on pedagogical *know-how*. The *Strategy Proposal* makes a distinction between technologies created and developed by individual *persons and institutions* and *generally available* standard technologies, and formulates proposals for the development of both. As regards the former, the *Strategy Proposal* places particular emphasis on creating a regulatory environment and climate which would incentivise the improvement of technological solutions, including teaching and learning methods, which may increase the effectiveness of education by as many individuals and organisations as possible, and would create a sense of ownership among the participants of the education sector as far as the continuous improvement of the applied educational technologies are concerned. Disciplinary communities, training programme organisers and teaching and academic communities at the institutional level should be encouraged to continuously enrich their repertoire of methods and technologies and to document their innovations in such manner which enables transferability and accessibility.

While placing importance on technologies created and developed by individual *persons and institutions*, the *Strategy Proposal* argues that the main source of innovation is in those *educational products* that are diffused either through the market or by public authorities, whose application is generally recommended or made compulsory, as these can ensure that innovation leading to the improvement of quality and effectiveness can take place in education even if such innovations are not initiated by individual persons or organisations. While the role of the market is vital in this field, active government intervention seems to be inevitable. In cases where the supply of educational technologies is insufficient, technological innovation needs to be stimulated – for example by setting objectives for innovation, providing funding for innovation, or directly initiating technological innovation for the benefit of education. There are several actions the government may take to facilitate the spreading of new educational technologies. These include:

- making new educational technologies available through knowledge transfer systems;
- matching new educational technologies with funding categories or, if it is not possible, creating new funding categories;
- removing obsolete technologies from the funding system, and replacing them with new technologies;
- including specific technology-based requirements related with new educational technologies or with pedagogical benefits achieved by using them into the general educational requirements
- maintaining a qualification and accreditation system for new educational technologies.

The *Strategy Proposal* places high importance on ICT, which has become the key focus of innovation over the last decade, and this trend is expected to continue in the future. The *Strategy Proposal* argues that the NESIS should focus on the development of organisational settings, competences and, last but not least, attitudes which are necessary for embracing new technologies. Considering the importance of this field, improving the application of ICT in education should be based on a detailed strategy which is consistent with the innovation strategy of the sector.

The implementation of the strategy

The desired objectives cannot be achieved by developing a strategy for the NESIS, unless this strategy is supplemented by proposals for the *implementation* of the strategy. This should also be the result of a planning

process which takes into account the *motivations, expectations and interests of all stakeholders*. It has its own methodology (*a combination of top-down and bottom-up planning and working*), which should be supplemented by the consideration of the required timeframes. Planning should follow the principle that both the strategy and the implementation of the strategy should involve a series of feasible steps building upon one another. This means that the implementation of the strategy is a learning process involving diverse participants from the world of education. According to the *Strategy Proposal*, the following would need special attention in this process:

- ensuring an attractive framework for the multidirectional consultation processes and the flow of knowledge and information among the system participants;
- reviewing the strategy and the implementation plan on a regular basis and making the necessary amendments;
- putting in place a complex system of evaluation and feedback among the participants;
- developing adequate indicators/measures;
- designing and maintaining an information platform suitable for managing the arising complex issues and problems; and
- finally, ensuring publicity for the processes of evaluation and feedback and for the results.

In connection with the implementation process, it would be worth considering the actors who could be most interested in the implementation of the strategy. This would require a *stakeholder analysis*. The purpose of such analysis is to identify the key actors who are the most interested, as well as those who may become less involved in the implementation of the strategy. The motivation and willingness of the various actors may depend on a number of factors, whose exploration is essential in the case of the key actors.

Intersectoral co-operation and communication are important means of implementation. At the moment, these relationships are not very strong and therefore present risks to the implementation of the strategy. Of the current regulations constituting the legal environment of implementation, the ones concerning public procurement and intellectual property need particular attention. While the applicable regulation of the relevant field is adequate, some legal harmonisation will be unavoidable, if the objectives of the NESIS are to be achieved. As regards funding, one of the most significant risks to implementation may arise from measures taken without information on the funding situation or the consequences of funding. It should also be noted that the implementation process itself will also incur costs.

Putting in place the necessary organisational conditions of operation may be a key to the successful development of the NESIS. This means that a specific agency/institution should assume responsibility for this function at sectoral level, and the organisational background of performing the required co-ordination functions should be given. This would require a review of the existing system of institutions with a view to strengthening those relationships between the necessary participants which may lead to more intensive networking.

Appendix

Objectives and Priorities of the NESIS Strategy

