Elaboration of NATIONAL RDI STRATEGY within the framework of the NATIONAL FORESIGHT EXERCISE

2007-2013

Bucharest, Romania

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CONTENT

Introduction

In the last part of 2004, The National Authority for Scientific Research launched a priority project, its results being later published under the name "Methodology and procedures for defining strategic objectives and priorities for the scientific research and national technological development for 2005-2010". This document has been elaborated by a group of recommended experts, key actors of the Romanian Research-Development and Innovation (RDI) system and it represented the preliminary stage for the elaboration of the Romanian research strategy correlated with the National Development Plan for 2007-2013.

The content of the material integrated the knowledge base of previous studies (e.g. Organizational Performance assessment for national R&D institutes in 2003), but also brought new element, essentially through:

1 Proposal for a new investment model for RDI system;

2 Presentation of frequently used methods and procedures for RDI strategy development and possible aggregations of these methods for the effective elaboration in different time frames (6,12, 18 months);

3 Defining a way to organize the elaboration process of RDI National Strategy, proposal for successive operations and time estimation;

4 Proposal for an alternative foresight development exercise in scientific-technological area form Romania, starting with the presentation of the international experience.

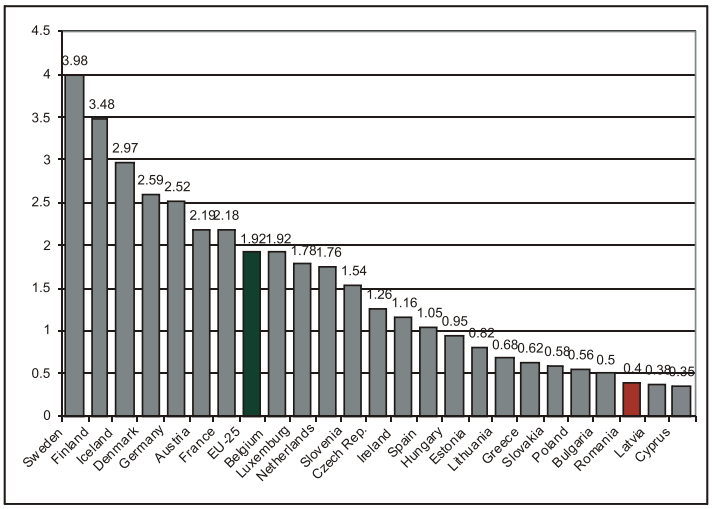
In order to be validated, the final result has been presented to a significant group of specialists from The Ministry of Education and Research. Their comments and recommendations have been integrated in the terms of reference for the public call "The Elaboration of the National RDI Strategy 2007-2013, based on strategic planning". The winner of the call is a consortium coordinated by The University Research Center and the Executive Agency for Higher Education and Research Funding, having as members 26 entities-universities, national research institutes, centers and institutes of The Romanian Academy and SMEs.

1. Context of RDI Strategy Elaboration

The elaboration of the new RDI national strategy for 2007-2013 has started to be made when **this long neglected field has become a real priority, following the Europen trend.**

As can be seen in the following graph, **the Romanian RDI system, underfinanced for more than a decade**, in 2003 was receving one of the lowest GDP shares in Europe.

Fig. 1. Gross domestic expenditure on R&D (public and private) as share of GDP in 2003 for the member and acceding EU countries



Alongside the Lisbon objective of reaching 3% of GDP for RDI, out of which one third from public funds, the interest for the RDI field improved in Romania. According the RDI chapter of Governance Programme for 2005-2008, the Government is targeting „an increase of public expenditure for research and development up to 1% of GDP in 2007"[1] (from a level of 0.21% GERD in 2004).

Hence, **starting with 2005 the share of GDP allocated to RDI has registered significant growth**. Only during 2005 this share increased by 60%, and the budget project for 2006 stipulates a new increase over 80%, a situation that nourishes the hope for reaching 1% public financing in 2007. However, a growth rate targeting 2% of GDP for RDI from private financing remains unlikely in this short interval, given that, for the moment, the instruments for reaching these objectives are still inadequate.

Beyond financing, **the RDI system lacked a restructuring strategy** in post communist period. The RDI Strategy project elaborated in August 2002 has not been officially adopted, and the RDI policy has been *de facto* driven through the National RDI Plan, which, by its nature should be a document with specific objectives derived from a broader strategy. Hence, the already small resources have not been properly focused on priorities connected to the economic or social needs, or to the global trends.

The dissipation of resources has been accompanied by **the absence of an integrated monitoring and evaluation system of the public investment in RDI**[2].

Hence, the overall results of the RDI activities are extremely modest, when compared with European Union countries. For instance, the number of Romanian patents registered at the European Patent Office per million inhabitants in 2002 was 157 times smaller than EU-25 average[3]. If one may consider that the level of patenting is influenced also by the intellectual property culture, we still cannot ignore that the share of

[1] http://www.gov.ro/obiective/afis-docdiverse-pg.php?iddoc=250

[2] See *R&D and innovation policies in Romania. Report of the Policy Mix Review Team,* September 2005 (CREST Report)

[3] Calculated based on Eurostat data - Structural indicators

real innovative companies is estimated to only 5% of the total number of companies[4].

The low ability of the RDI system to provide valuable output is also reflected in economic performance. Thus, the share of high-tech exports in total exports in 2003 represented only 3% in Romania, compared with the EU-25 average of 17.8%.

The current situation of the RDI system is also not very encouraging. Thus, te number of R&D employees dramatically decreased in post-revolutionary period, their share in total employment reaching only 0.34%, compared with the EU-25 average of 1.43% in the same year[5]. The connection between RDI system and industry has been lost[6], and the RDI activity in industry and universities maintains at lower levels compared with the situation in the EU[7].

Certain fields that are usually supporting the RDI system, as the information society or human capital are also registering significant gaps from EU level. Looking at the synthetic indicators: the IT expenditures as share of GDP represent in Romania only 0.3%, compared with 3% in EU-25[8], while the number of graduates in science and technology (per 1000 persons 20-29 years old) reaches only 9.4 in Romania, compared with 12.2 in EU-25.

The above mentioned increase of public expenses for RDI makes the elaboration of the strategy even more stringent, not only for a more efficient allocation of resources, but also for transforming the RDI system into an engine for economic growth. The development gap which Romania has to overcome is considerable taking into account that GDP per capita is one third of EU-25 average. Moreover, Romania must reach the stage of „knowledge based economy", currently being in the „factors driven stage" or „investment driven stage"[9].

Practically, Romania should adapt to the EU social-economic policy trend, where the RDI field is considered to be a key element of the European development model. „Knowledge and innovation" represents one of the three pillars of the new Lisbon Strategy and its objectives are already reflected in a series of programmes or policies, namely:

- *Framework Programme VII for Research, Technology and Development* of the European Union, which covers the period 2007-2013, and which benefits from a budget almost double compared with the previous multi-annual programme;
- The launching of the *Framework Programme for Competitiveness and Innovation* for the period 2007-2013;
- Cohesion policy[10] that is also targeting the economic restructuring towards a knowledge and innovation based economy.

Starting from 2005, every EU member state should provide a three-year national plan in order to reach the Lisbon objectives, and should annually deliver a report regarding the progresses registered[11]. In this respect, Romania will have to concentrate its efforts not only on increasing the public spending for RDI, but also on delivering a consistent output.

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[4] Vass, A. (2005), Private Sector Interaction in the Decision Making Processes of Public Research in Romania, Draft document provided to the policy mix peer review team

[5] UE-25 avearage Eurostat data (Statistics in focus, 3/2005). The value for Romania was calculated beseds on data from the National Statistics Institute regarding total employment RD employment.

[6] This weakness has been aknowledged by the Ministry of Education and Research (MER). According to MER, only 12% of reserch results are followed by applications in industry.

[7] CREST Report, p. 3

[8] Eurostat Structural indicators. Data for 2004

[9] As mentioned in the Competitiveness Sectoral Operational Plan of the National Plan for Development *2007-2013*.

[10] Cohesion Policy in Support of Growth and Jobs: Community Strategic Guidelines, 2007-2013, CE Communication, 05.07.2005

[11] Member states should present their first strategy in automn 2005.

2. Why foresight?

Even at a sketchy analysis of the present issues, the migration to a knowledge-based society shouldn't avoid two evident findings:

- The social changes associated to the evolutions of the knowledge-based society, have a large coverage and are potentially profound;
- There is a considerable incertitude regarding the future perspectives - not just in terms of times or details, but in general terms, related to fundamental changing trends.

Considering the topics that the social actors might be interested in, the above mentioned circumstances require a more systematic and rational examination of the long term future.

From the short-listed factors identified when describing the present context in which the Romanian RDI system functions clearly result the following systemic needs that those in charge with the elaboration of this strategy should take into account, namely:

1 The reconstruction of the RDI system based on a firmly assumed long term perspective;

2 The enlargement and diversification of the consulting base in order to elaborate the new RDI strategy and to involve in this process the key-players affected by the impact of the strategy implementation;

3 The improvement of the informational support necessary to ground, elaborate and implement the political decision;

4 The establishment of a national core of competences in prospective analyses at the national level that can be turned into an efficient instrument for management of change.

Having an inherent anticipative, participative, interactive and integrative character, foresight methodology turns out to be the most appropriate approach for the above mentioned needs, complementary to classic decision making and planning processes.

Additionally, the EU accession is under development and the post accession status call for Romania to comply with some specific European requirements regarding its RDI system.

In March 2000, at Lisbon the Presidents and the Prime ministers of the EU member countries decided, upon adopting a long term strategy meant to transform EU, by the year 2010, into ”the most competitive and dynamic knowledge based economy capable to assure a sustainable economic growth, better jobs and increased social cohesion.”

The transition to the European Research Area is a key dimension of the Lisbon strategy and the open coordination of the national and EU RDI policies has already been included on the priority list and current agenda of the national and European decision makers.

The RDI policies are based (both implicitly and explicitly) on perspectives upon the future of science, technology and society. Therefore, the open coordination approach applies to these visions, as well. That's why cooperation in foresight matters is already an important part of the effort of structuring the European Research Area and making it functional.

The complexity of the relations that link sciences, technologies and society both in the common European effort and in the global competition, makes successful investment in science and technology to be an essential factor. Furthermore, the decisions makers have to be able to select those industrial and social fields that, on a long term basis, would turn science and technology investments into innovation and increased living standards.

As science and technology investments become more and more expensive policy makers from both public and private sector ask for more and more reliable systems that permit a fast detection of the relevant socio-economic signals and a comprehensive risk and opportunities assessment, related to the scientific and technological evolutions.

These are the reasons that have determined and still determine Governments and other social actors to adopt foresight methods and **to create specialized foresight units** with the purpose to introduce strategic orientations adequate to policy making processes.

3. What do we understand by "Foresight"?

Individuals, organizations, companies and countries need to plan for the future. Families are planning their budgets. Business and industry employ intelligence gathering tools and mathematical modeling to support strategic planning. Governments develop local, regional, and national level plans. Still, most planning exercises focus on relatively short life-cycles, as they are usually tied to production requirements or budget cycles. In particular, government planning is linked to annual budget cycles and policies that reflect their life expectancy.

The term "Foresight" is used to describe a type of prospective exercises that takes into account periods longer than 10 years, going beyond the business planning horizon. Technology foresight looks at the present and future of science in order to identify emerging factors of change, and the types of scientific research and technological development likely to yield the greatest economic, environmental and social benefits. Therefore, most desirable type of prospective investigation is socio-economic, involving expertise from the academic community, public sector, private sector and civil society members.

It must be stated that a foresight process does not claim to predict the future. Instead, it seeks to identify plausible hypothesis about change through a structured analysis of what could emerge from foreseeable developments in science and technology, and how they might affect the society. The foresight process provides planners and decision-makers with a process and a product that helps identify potential links between present day policies and actions, and future outcomes. Its value lies in the attempt to capture broadly based intelligence on a long-range time horizon. In this sense policy-makers can make earlier identification of possible threats and opportunities by illustrating how barely recognizable trends ("weak signals") can have important consequences in the future. Governments and organizations with the ability to recognize the link between these "weak signals" and potential threats or opportunities can make better choices, develop contingency plans, and become more effective in their decision-making.

For a formal definition of technology foresight, one might consider Martin and Irvine (1989): foresight is a tool or set of tools used "*to survey as systematically as possible what chances for development and what options for action are open at present, and then follow up analytically to determine to what alternative future outcomes the developments would lead*"[12]. But we'd much rather go with the following definition, that foresight is "*a systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilising joint actions*"[13]. As Loveridge puts it, foresight is "*a marriage of intuition, science, anticipation of value/norm shifts that cause changes in personal expectations and a sensitivity to developing trends in society, [...] Foresight activity falls into the fuzzy region that fills the ground where the six themes: Social Technology Economics Ecology Politics and Values/Norms intersect as shown in the Venn diagram [...] Foresight then is highly interactive, influencing and being influenced by the interrelationships in the STEEPV set.*"[14]

A foresight exercise is a type of prospective analysis that fulfills the following criteria:

1 *Supports political decision.* The objective of a foresight exercise is to model the future, define needs and produce results that support the decision-making process. Such an endeavor does not have value in itself and cannot be assimilated to the scientific research.

2 *Has a participatory character.* A foresight exercise means to involve participants from various groups of significant actors (researchers, managers, experts from business, industry, administration and civil society) and to disseminate the partial

[12] Martin B., Irvine J. (1989)

[13] This definition was proposed by Jennifer Cassingena Harper, during the "For-Learn mutual learning workshop", Bucharest, June 2005

[14] Loveridge D. (2001)

results beyond the participants during the consulting phase in order to obtain feedback

3 *Proposes alternatives for the future.* The foresight exercises are based on the assumption that future is not pre-determined and it is highly possible to evolve in different directions depending on the actor's decisions. Consequently, there is a freedom to choose preferable states from multiple possible scenarios.

4. Foresight profile in Romania

4.1. Foresight strategy

The foresight process objective is the change. Change as an organizational process has been studied within a framework of management of change, including three types of strategies: Information-driven strategies, Value-driven strategies, and Power-driven strategies. Recently, Relationship-driven strategies were added. Each one of these meta-strategies approaches planning and implementation of change from different philosophical assumptions, according to the understanding and control of the impact of a prospective exerciser within the STEEPV analytical frame.

Information-driven strategies rely on the principle that people are rational and willing to change. The implementation of the strategy works like this: the result of foresight planning is put forward by the management group, who justifies change by pointing out the relation between the foresight rationale and the chosen methods. Also, the level of participation needs to be underlined. The belief is that decision-makers, strategy planners, and the public will understand the need for change, if it is the result of logical reasoning. Even though the whole approach is focused on data, a variety of communication strategies are used to move things forward.

Value-driven strategies are based on the assumption that change is based on people's perception on what is good and bad. Change is motivated when individuals identify some level of dissatisfaction with the current situation due to the clash between the political "correct" discourse and fundamental value. In this case the task of the foresight practitioner is not to find the right information for strategic decision support, but to find relations between values of the individuals and values of the environment. Thus the process of seeking scenarios for further developments becomes as important as the result itself and the involvement of as many members of the system is the underlying principle. The primary assumption is that intelligence is social rather than rational. Change extends beyond the development of common understanding at a rational level, to include personal meanings and values of the members.

Power-driven strategies emphasize that negative outcomes derive from the lack of change implementation. Both the foresight process and the resulting outcome are understood in the context of the international system. Therefore they depend upon the understanding of the inter-action with other international entities. The two primary sub-strategies in this approach include the use of legitimate power to promote change and the use of economic policy instruments as a way to motivate change initiatives. Although this type of strategies appears to be based on the negative motivation approach, they are mostly combined with strategies of the first two types with effective results. But we should also notice that the power-driven approach of the foresight exercise is a rather risky one, taking into account the various external threats namely: the society might not be fully prepared to accept the foresight process, the implementing organization might not be completely able to manage such a project, comprising much more complexity than the other two previously mentioned approaches; political decision makers ordering the foresight exercise might change their priorities. The following characteristics outline the "authority" involved in such strategies of change.

Common assumptions for power-driven strategies:

1. The authority has the legitimacy and certain rights individuals should comply with the requests of those endowed with authority.
2. People with authority have the responsibility to guide other individuals from the system. It is irrelevant whether all of the individuals consider the guiding process fair and opportune.
3. People with authority can sanction the persons that do not follow the guiding process.
4. The general interest is served by following the indication given by authority figures.

Power-driven strategies include a large range of approaches, going from forcing change to understanding authority as the main catalyst of change. It is the latter approach that describes power-driven authority foresight strategy. In this case, the role of the authority figure is to generate information-driven and/or values-driven strategies, so that the dynamics of the foresight process should not be influenced by the capacity of the authority to impose change.

The context of Romania's National Foresight Exercise subscribes it to a power-driven strategy of change. Therefore, the role of the authority figure becomes more important and its involvement more necessary, in order to get an optimal result. We must emphasize that the foresight process itself is the instrument of change and not only its final outcome. On the other hand, it is hard to imagine that change might be generated by the mere interaction of the entities of a weakly structured system, characterized by a strong resilience to change. Involving the authority figure becomes essential when motivating the experts and when taking decisions on structuring the dialogue.

More recent research has suggested the existence of relationship-driven strategies that seem to be related to a distributed model of foresight exercises. Such model is embedded at multiple levels within the innovation system. Its main drivers are self-organizing and bottom-up, while multi-level governance provides starting points. The assumption for a relation-driven strategy is that once change is accepted in one point of the innovation system, it is likely to radiate in related areas.

However, it should be mentioned that these four meta-strategies of change correspond to "ideal types", so they do not necessarily exclude each other. A foresight strategy might include two, three and sometimes four such approaches, but there is always a dominant type. Only by understanding the whole complexity of the phenomenon one can produce a coherent implementation plan and define the roles of executive team members.

4.2. Implementing the Foresight Process

The foresight processes involve a constant will to examine long-term options, to consider possible scenarios for the future and to confront them to the existing paradigm, in order to define objectives in the framework we want to create. Therefore, the emphasis falls on the idea of alternative scenarios for the future: the future is not predictable but alternative scenarios can be further imagined, explored and assessed. But, in order to define alternative scenarios, trends of change and critical issues must be determined through an investigation in the present. The first step in developing a foresight exercise is to identify possible changes for the society, individuals, technology, economy, environment, political structures, and regulation regimes. Change in the external environment influences the internal environment and decisions or actions regarding critical issues.

Every foresight exercise is unique. Including it in a typology of strategies of change and defining its specific developing conditions generates a large set of variables; therefore it is impossible to define standardized methodologies of foresight. Beyond the mechanical component of using and combining certain structured consultation techniques, each foresight exercise is an experience in itself. However, there is a significant number of facts to be considered for the design of a foresight exercise, extracted from good practices. Therefore, the international cooperation in foresight process development is very important. The ways in which it should be carried out, and also its intensity, are open questions and they represent the subject of a project within the 6th European Frame Programme.

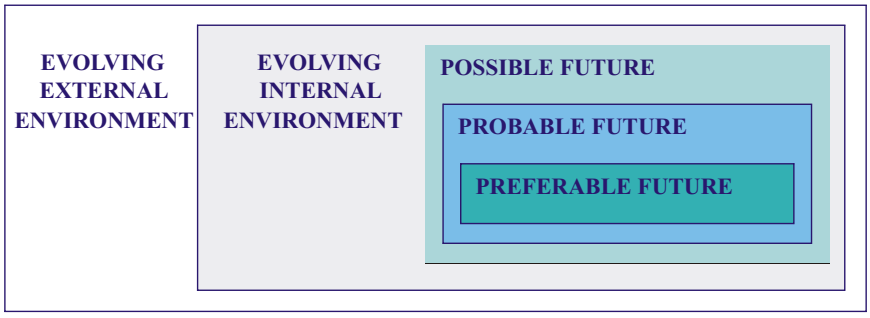

Fig.2. Systemic Approach to Foresight

Developing foresight studies involves four primary activities, each one with its own range of methods and techniques, data-oriented or process-oriented:

(1) *Identifying change* involves collecting baseline data and patterns of change in the past, in order to identify cycles, trends, or emerging issues. Foresight involves structured anticipation of technologic, economic and social developments and needs, market needs perspective being thus enhanced by the inclusion of the social dimension, comprising needs and interests of the social actors;

(2) *Considering the impacts of change* means assessing the relative impact of future changes, evaluating the impact on individuals, confronting changes with an established paradigm;

(3) *Imagining alternative futures* relies on scenario building and analysis in order to explore opportunities and threats, to imagine our preferred future. "Scenarios are plausible representations of the future based on sets of internally consistent assumptions, either about relationships and processes of change or about desired end-states." (Berkhout F., Hertin J., 2002);

(4) *Visioning preferred futures* requires explicit definition of mid and long-term goals, and the values that contribute to them. As Smith and Mason put it, future studies' "findings should be presented with great care and in a way that is relevant to organizational strategies and goals." (Smith J., Mason M., 2004) This step is crucial, since only by paying the utmost attention to scenario communication one can expect a powerful impact on stakeholders;

But a future study cannot be produced independent of the following two activities:

(5) *Planning and implementing*, that depend on the political will to make good use of the results of a future study;

(6) *Monitoring and evaluating* inputs, outputs, outcomes, and impacts of change in order to determine that new future studies are needed.

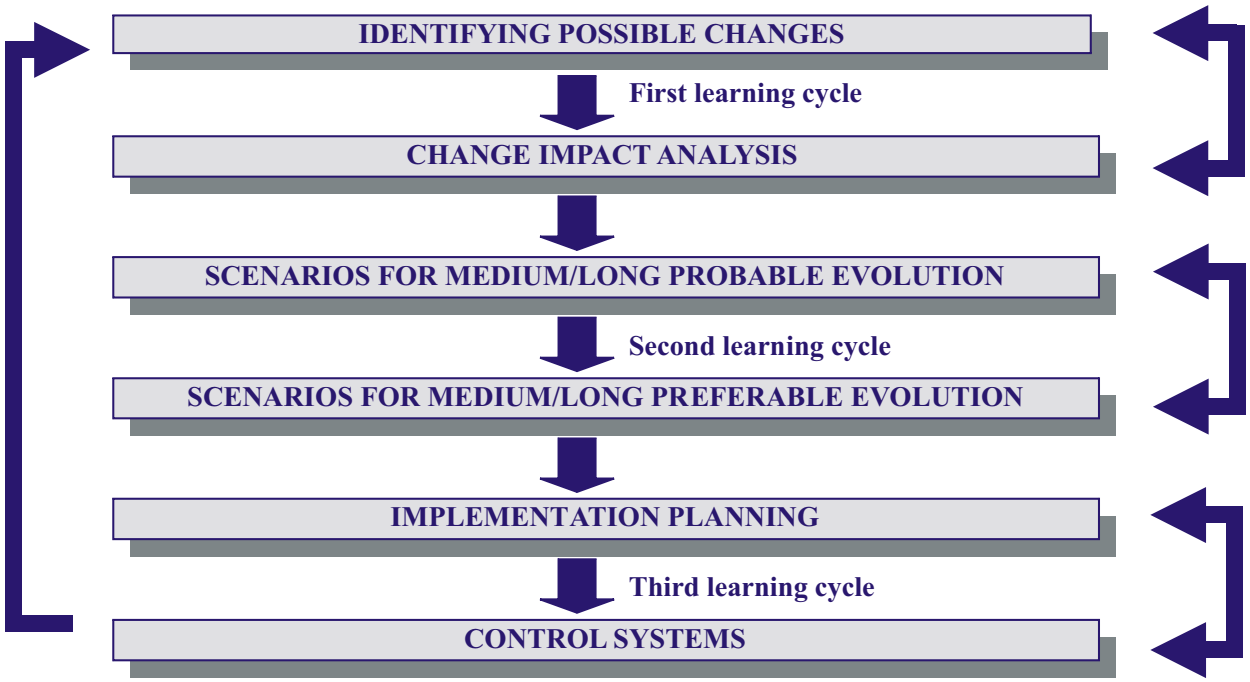

Fig.3. Foresight infinite loop

We must note that the implementation of those six steps is not necessarily managed by the same organization. In fact, usually we are talking about different actors. But we must also notice that the relation between those actors is not linear, from the development of the foresight study to its implementation. Indeed, the foresight process is continuous, the infinite loop of foresight evolving in the implementation space. The foresight process is not punctual, taking place every ten years; new visions must be produced according to the signals of the evaluation and control system.

Implementation of the Romanian National Foresight Exercise will go through three stages and the following steps:

First stage: Preparing the foresight process

(1) *Identifying investigated fields* (1) is the first step, aimed at a more efficient and systematic collection of information regarding possible change, defined as a set of priorities for action in each of the fields. Such fields might be "thematic" (for example, "Information Society Technologies") or "systemic". Final selection of investigated fields will be done by the Steering Committee, in agreement with high level decision makers.

(2) *Identification of experts* (1) will be done through a process of successive nomination that should keep in balance the following categories: Science, RDI Management, Industry/Business, Public administration and civil society. The core group of experts (around 120 individuals) will be nominated by the members of the consortium, entrusted by the Ministry of Education and Research to manage the National Foresight Exercise. Each one of them will nominate at least one expert, but no more than three, from the above mentioned categories, forming thus the Level 1 of the experts' group. In their turn, Level 1 experts will apply the same procedure, resulting in the Level 2 of the experts' group. This procedure structures the experts' group, balancing the level of interaction and the scientific depth, on one hand, and the consultation's dimension, on the other.

(3) *Identification of the key actors* (1) actors will have two main objectives: to increase the percentage of experts involved in consultation stages and to identify ways in which stakeholders can be reached, during the intelligence gathering stage.

Second stage: Identifying the key parameters

(4) *Structuring the consultation*. In order to analyze each investigated field, a panel will be set up with the objective to determine the field's priorities. First step will be to identify an initial set of possible priorities (50 to 80) through workshops, interviews with stakeholder representatives and reports made by independent experts. Once semantic equivalences will be eliminated, the possible priorities will be grouped in three to four clusters according to their subject matter.

(5) *Assessment of trends*. Each panel will organize a conference, ensuring a relevant degree of interaction and scientific depth. Individuals will be invited to take part in three or four simultaneous events (negotiation workshops) for each cluster of priorities identified at the previous step, according to their competencies. It will be important to balance participation among science, RDI management, industry/business, public administration and civil society experts so that a significant social- economic priorities selection is done. In the same time, a solid network for the implementation of change is created.

The already created panels will act as scientific councils of the conferences and will prepare the schedule and the list of participants as well. The results will be assessed and will be structured as a set of 25 to 30 possible priorities for each field.

(6) *Impact analysis*. (1) The list of priorities generated, as mentioned above, will ground the list of statements for a Delphi like survey. The possible priorities will be assessed in accordance with criteria that were the result of the strategic vision statement. All the nominated experts will be involved in this consultation.

(7) *Setting-up the priorities*. The survey results will be analyzed by each panel. The

conclusions will form a Report regarding the priorities of Romanian RDI system up to 2020.

Third stage: Selection of scenarios

(8) *Developing realistic scenarios*. Independent experts ("genius forecasters") will draw up alternative scenarios for the development of the RDI System until 2020. They will work with predefined templates, integrating subsets of priorities.

(9) *Preferred scenarios selection*. The scenarios selection is the last and the most critical step of the process. Its implementation will be achieved through a vision workshop in which members of the Steering Committee of the foresight exercise, policy makers and other guests will take part. "The Romanian RDI System in 2020" study, consisting of a collection of preferred scenarios together with correspondent strategic objectives for 2007-2013, is the output of the vision workshop.

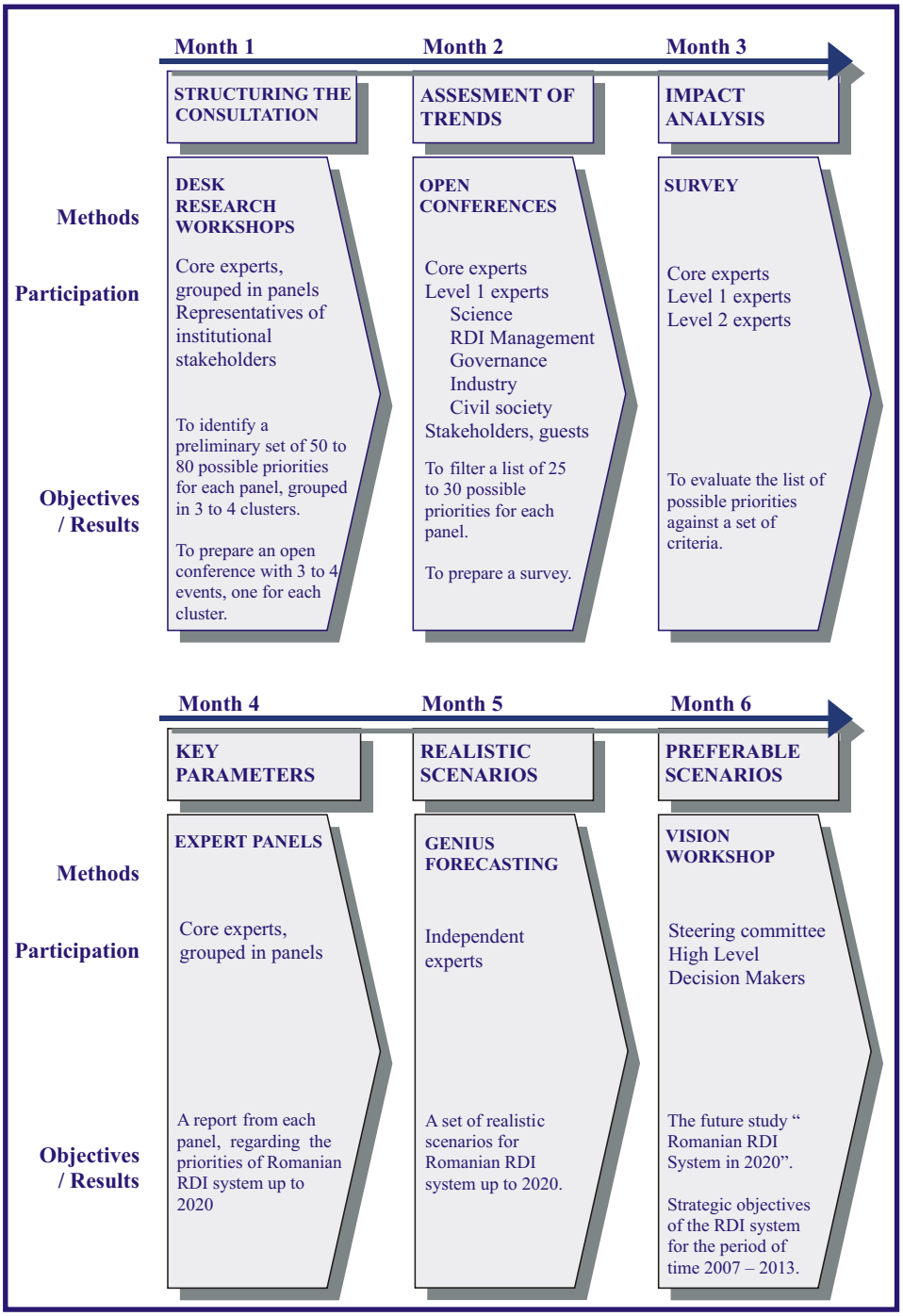

Fig 4.: Main learning cycles

5. From Foresight Process to the Elaboration of RDI Strategy and the National RDI Framework Programme

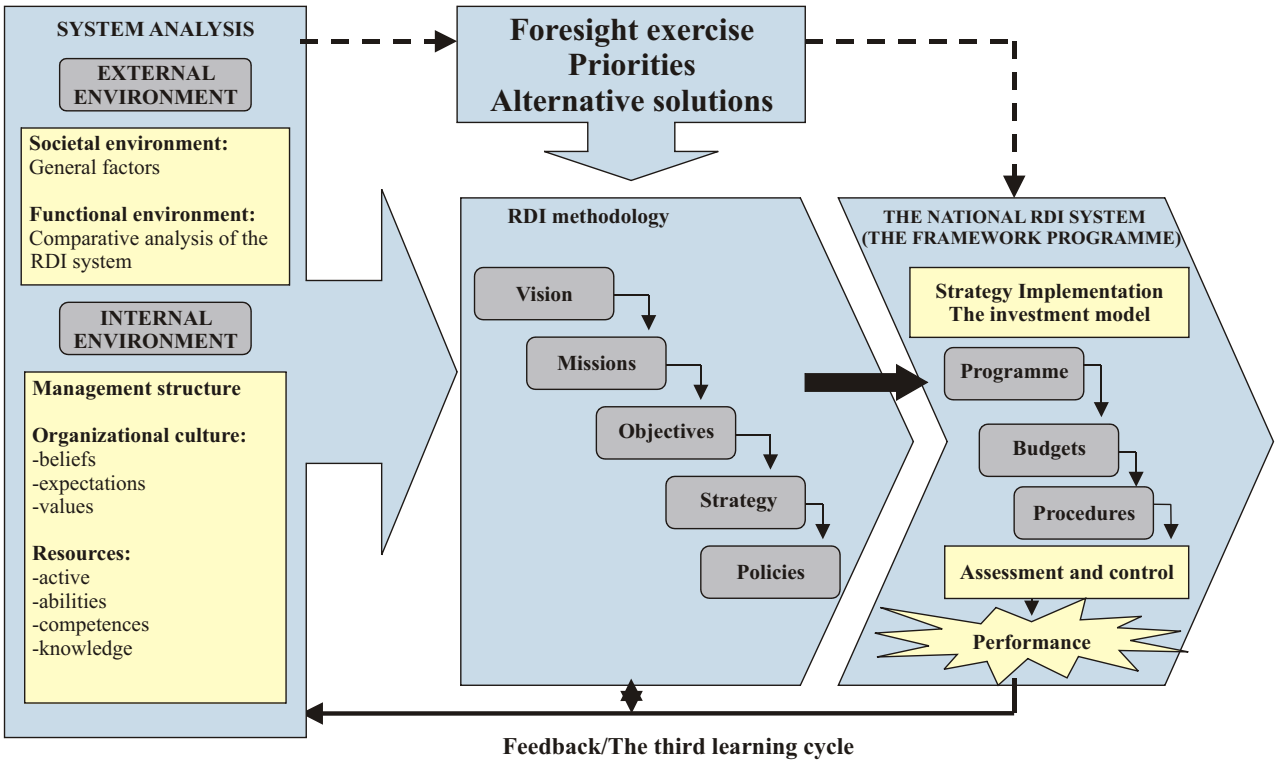

Fig.5. Logical sequence of the elaboration process of RDI strategy

The above figure shows the sequential development of the RDI strategy elaboration process and of the National RDI Framework Programme for 2007-2013. As presented, this scheme could be methodologically framed in a classical strategic planning process.

At this moment a strategic planning process at the international level is rather considered as being a systemic scheduling of some predefined strategies that are further developed into action plans.

From this point of view, strategic planning is more linked to the past and to the present than to the future.

Consequently, a new concept has been developed namely strategic thinking (Liedtka 1998) understood as a synthesizing process that uses intuition and creativity and whose outcome is "an integrated perspective over the system/organization".

Fig. 6: The integration of the strategic planning and thinking processes

Considered as being opposite concepts in the acceptation of different authors, strategic thinking and planning finally proved to be complementary and integrative.

This view was adopted by the team of the project that is in charge with the Elaboration of the RDI National System Strategy and of the National RDI Programme for 2007-2013.

The definition of the goal of the strategic thinking project clearly reveals that foresight approach is in full concordance with the goal itself; that is why the project structure includes a working group assigned with the development of a prospective exercise targeting the year 2020 and whose results (prioritizations and scenarios) are to be inputs for the specific activities designed for the elaboration of the RDI strategy and of the National RDI Framework Programme for 2007-2013.

This way provides the project with investigative-anticipative pieces of information (strategic intelligence) necessary to ground the RDI vision within the methodological framework that will lead to social acceptance that is absolutely necessary when it comes to implement the results of the project.

Because of the strategic thinking-planning approach, the project's team will choose to use the RDI Framework Programme term instead of the National RDI Programme. The first term is meant to spread the idea that the implementing tool for the national RDI strategy shouldn't be associated to a rigid planning but to a tool that grants governance of the system and has elastic and foreseeable elements, meant to permit the change management.

5.1 The Investment Model for RDI activities

The output of the project can be integrated into an investment model for RDI activities, the development of such a model being a result per se. A system of indicators will be related to strategic goals, thus assuring a permanent feed back with the granted budget. The consortium takes full responsibility of implementing the investment instruments considering the feed back measuring methods and of up-grading the RDI policies accordingly.

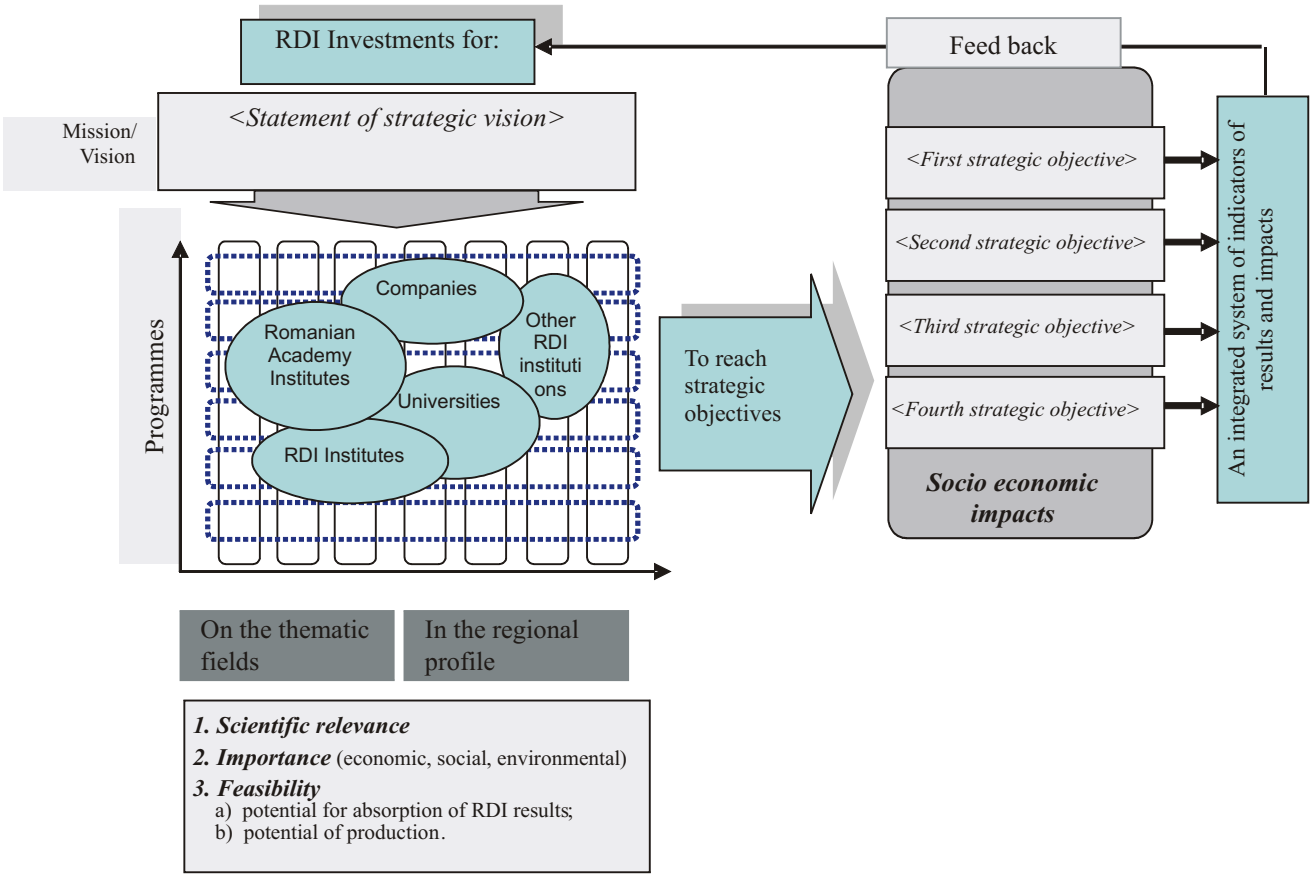

Fig. 7: An investment model of the RDI system

6. Project organization

The coordination and the execution of the project will be accomplished by the following groups:

The Steering Committee - represents the highest decisional body regarding the project and assures the general coordination[15]

The Scientific Council - provides technical-scientific support and ensures specialized consultancy to ground the management decisions. Its members share their points of view and make recommendations for the final reporters that are to be released at the end of each phase.

The Executive Board is composed of a chief executive manager (CEO) and a Deputy Manager. They are in charge with the team management and they take full responsibility for the project development in front of the Steering Committee. Therefore they keep a strong relationship with the Scientific Board and foreign experts. They maintain the interface between the steering committee and the beneficiary: The Romanian Ministry of Education and Research.

The project management team develops specific management activities in order to reach the goals and to successfully implement the project. The team is formed by: two project assistants for the two directors, two assistants for the work packages (WP2/WP 3 and WP4/WP5), a person in charge with public relations and a legal advisor.

The Work Packages managers provide the operational coordination of the afferent activities and work directly with the involved experts. Each of them has the necessary skills related to the specific character of the package.

The project has 5 working packages as following:

- WP1- The executive management of the project that includes the Executive Board and the Management Team;
- WP2- "The Assessment of the present RDI system";
- WP3- "The Definition of the RDI system priorities" and the research activities;
- WP4- "The Designing of the vision and of the strategy of the RDI system";
- WP5- "The Elaboration of the RDI Framework Programme in Romania".

The expert groups include experts from the following domains: science, public administration, industry, science and technology management, civil society. The list of experts is made on the proposals of the work packages managers that are discussed and validated by the Steering Committee. The groups work independently and have well defined tasks in the working plan.

The group of the national experts is supposed to assure a high level of competence, legitimacy and therefore all the above mentioned fields should be homogenously represented. These are necessary for a correct dimension of the project a warranty for the validity of the final results. A group like this is the result of a process of nomination and two co-nomination processes that were developed in October and November 2005. This category will contribute to the structured consulting that is part of the national foresight exercise.

The foreign experts group ensures the input and the external expertise necessary to correlate the result of the project with similar effort that was developed at the European/international level.

The international advisory board consists of international organizations representatives and of central administration representatives that have a role or are interested in the Romanian RDI system.

The international experts group consists of foreign experts with experience in strategies development, foresight, science politics, having the great support of JRC, DG-Research, Unit K2-Foresight and NSF.

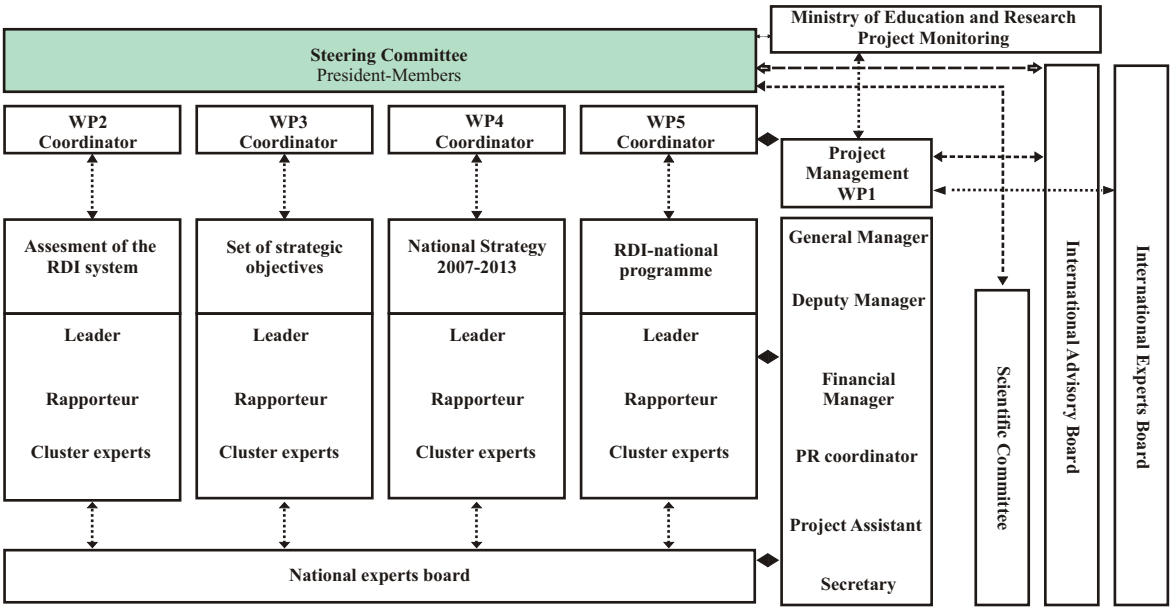

Fig.8: Project's organizational chart

7. Expected results

Phases	Deadline	Reports/Results
First phase	17th October 2005	▪ Report on the methodology used for the diagnosis of the system and performances at the present time; ▪ Report on the methodology used for the diagnosis of the organizational and managerial system; ▪ Report regarding the methodological framework of the National Foresight exercise; ▪ Report on the methodology used for the diagnosis of both inside and outside environments that influence the RDI system.
Second phase	31st December 2005	▪ Performance appraisal of the actual performances of the RDI activities, including the National RDI programme for 1999-2004 ; ▪ Report on the actual organizational and managerial RDI system; ▪ The assessment report of the internal and external environment from relevant perspectives: economic, cultural, educational and juridical; ▪ SWOT Analysis Report regarding the internal end external influence factors; ▪ Report regarding the First Part of the National Foresight Exercise; ▪ Report regarding the methodological and organizational framework for the second part of the National Foresight Exercise.
Third phase	28th February 2006	▪ Analysis report of the National Foresight Exercise; ▪ Report regarding the methodological framework for the second part of the National Foresight Exercise.
Fourth phase	30th May 2006	▪ Report regarding the priority of the strategic objectives, the defining process of the new organizational system and the RDI management that implements the strategy and draws up the programmatic tools for the Romanian RDI System 2007-2013 after a consultation at the national level; ▪ Report regarding the determination of the strategic objectives and their priority and the make up of the programmatic tools for the Romanian RDI system for 2007-20013 that results after a Foresight Exercise.
Fifth phase	30th August 2006	▪ The elaboration of RDI national strategy for the period 2007- 2013, based on strategic planning elements.
Sixth phase	30th October 2006	▪ **The national RDI strategy for the period 2007- 2013 with proposals regarding the contracting, monitoring, financing and control mechanisms and procedures that resulted after a debate at the national level;** ▪ The schemes of the rest of the programmatic tools resulted after a debate at the national level.

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