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**Ten Steps in the Quality Assurance of Higher Education –
A Case Study in the Transilvania University of Braşov**

Ion Vişa

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Ten Steps in the Quality Assurance of Higher Education – A Case Study in the Transilvania University of Braşov

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Introduction

As part of the EU, the Romanian universities must develop strategies for insuring competitiveness and successful integration in the European Research and Higher Education Area. The international trend is to enhance the links between research, education and training, by developing the frame and the instruments for a fast transfer of the research results from the laboratories to the classroom and to the companies. These strategic points must become a priority in any university, and the actions foreseen will individualize each academic institution.

Starting with 2004, based on a detailed analysis, *Transilvania* University of Braşov developed the strategy and the action plan, targeting integrated research and education structures, highly competitive at national and international levels.

The re-structuring process was complex and involved all the member of the academic community. It can be described as a ten steps process that was developed and implemented in the Transilvania University starting with 2004.

Step 1 – Setting up the Strategy

Prior to developing the institutional strategy, a complex analysis was done, evaluating the resources and results and formulating the medium and long term targets. It was the moment of identifying the weak and the strong points; this evaluation showed us that we had valuable, well trained, professional human resources but scattered and sometimes with overlapping activities. The infrastructure needed a profound development and, since funds were predictably limited, there was a need for formulating strategies for avoiding the redundancies. The analysis was also meant to evaluate the opportunities, opened by the Bologna process and the EU accession and the threats mainly represented by the real competition in the international Higher Education Area. It was found that there is a need for developing education as required by the labor market and research of excellence, along with a much better cooperation with the economic representatives and with the local, regional or national decision makers.

Consequently, a strategic plan was proposed and validated by the University Senate, for the period 2004 – 2008 while the updated version was extended up to 2012, with the following targets:

- 1. Quality education, able to provide our graduates a fast and successful insertion in the labor market, in and outside Romania, by:**
 - Enlarging the education and training offer;
 - Developing a modern infrastructure;
 - Increasing the visibility of the university;
 - Increasing the efficiency in using the funds.
- 2. Competitive research that individualizes the university at national and international level**
 - Developing advanced knowledge;

- Developing advanced research for High-tech product development;
- Enhancing and maximizing the use of the resources;
- Increasing the visibility and enlarging the technology transfer of the result.

3. *Developing integrated research and education*

- Developing integrated research and education structures at institutional level;
- Developing the internal management instruments.

4. *Direct link with the economic and social environment*

- Effective partnership between academia, research centers, industry and authorities;
- Joint lifelong learning and research programs;
- Identifying or creating small business partners (spin off).

Once the targets settled, the next step was to support their fulfillment by developing the institutional framework and the instruments. The institutional framework for implementing the strategy and action plan is formulated in the University Charta which was adapted to the development needs, with the full agreement of the Senate and of the entire academic community. But the instruments had to be developed and this process was started early and is still running, according to the needs.

Step 2 – Developing the Institutional Instruments

Before 2004 there were launched the Department for Quality Assurance and the Department for Open and Distance Learning. These two departments were re-formulated, considering the new development objectives and new structures begun to function starting with 2004:

- The Department for Doctoral Programs - The Doctoral School
- The Lifelong Learning Department
- The Department for Financial Efficiency of the Education Processes
- The Department for Research and Education Projects Management
- The Department for Links with the Economic and Social Environment
- The Department for Intellectual Property Rights
- Mass Media and Communication

According to their status, these departments have a well defined role in providing information, consultancy, internal monitoring and evaluation on the specific processes of the university, both didactic and research. They have their own staff and are coordinated by experienced members of the teaching staff. Year by year their activity was shaped according to the university development actions and year by year the results directly linked with the departmental activities were increasing in quality and amount.

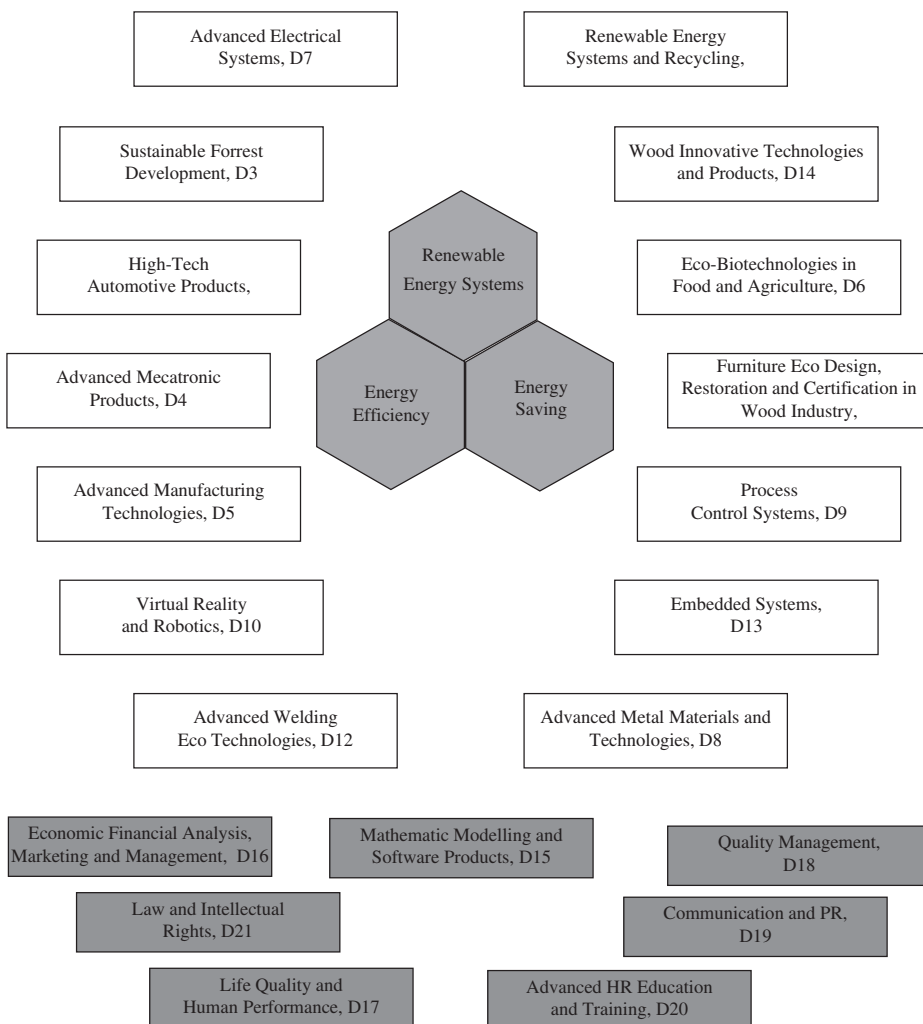
The first process subject of restructuring was research, considering that a university of excellence can be defined only based on the high level research.

Step 3 – Restructuring the Research Activity

Academic research represents the fulfillment of one major task of any university, as knowledge developer. Transferring this knowledge represents the other important rationale of an academic institution, as knowledge provider. But excellence is hard to attain and maintain; it requires existent and permanently developing resources, it requires the capacity of gaining recognition among peers and beneficiaries, either at societal or at economic level. And this requires a strong and coherent approach. Therefore, more than three years were dedicated to a deep restructuring process, for defining the research targets, resources and competencies. The results were the formulation of 21 research departments, all over the university, gathering the staff from all the 16 university faculties. The departments have their own personnel and infrastructure, are coordinating the full time doctoral programs and responsible for launching the research mater programs. But what is the most important result is that all these departments have a common, unique priority: Sustainable Energy, with the three components: Energy Efficiency, Energy Saving and Renewable Energy Systems. Among them,

14 departments are focusing on high-tech product development while the other seven are (mainly) offering tailored support for the advanced research and its results.

Research Departments



The research departments will form the RDI Institute *High Tech Products for Sustainable Development, PRO-DD*. The institute will have also the location in the new university campus, *Green, Energy Independent University Campus – GENIUS*. The institute consists of 11 laboratory buildings, and their construction and the new infrastructure will be developed in the frame of the structural funds project with the same name (POS CCE, ID 123, 11/2009). The campus will also consist of a dedicated area for education (2nd and 3rd cycle) and students facilities, including a sports area. An important part of the campus will be dedicated to the cooperation with high tech companies and to valorizing the research results in a pool of excellence.

The PRO-DD institute must be self-sustaining, functioning based on financed research and research services and therefore it must have, along with the infrastructure resources, also a strong core of professionals. Education through and for research, in full time doctoral programs was therefore considered as an important step in our development.

Step 4 – Doctoral Programs: the Path towards the Research Career

The university has a strong engineering tradition and 13 doctoral fields are accredited in the university by the national structure in charge (CNATDCU). In the past years, the research in the non-technical fields got coherence and consistency and new doctoral fields are now proposed for evaluation and implementation in our university: philology, medicine, pedagogy, sports, law. The full time doctoral students are part of the research department. The subjects of their programs are decided according to the major priorities followed by the departmental research and are, in the large majority, part of the research grants and contracts. The doctoral school, representing the advanced education path for the first year of the programs is organized for all the doctoral students and offers support courses for research (creativity and innovation, documentation techniques, intellectual property, and research and project management) and advanced courses in the doctoral field and subject. Starting with 2008, the full time doctoral students are financed via a structural funds project for human resources development that offers a well balanced amount of tasks and rewards, supporting their training, research and dissemination activities. The future path includes also post-doctoral programs, offered to the best of the graduates along with their full time employment as permanent research staff in the RDI Institute PRO-DD.

The applicants for doctoral programs are the master graduates from our university but also from other Romanian and international academic institutions. According to the Bologna concept, the length of the doctoral studies is of three years, therefore there is a real need to design and develop the appropriate master programs, offering to the students the basics of the research. Therefore, the next step was to reformulate the master programs.

Step 5 – Master Programs: Training through and for Research

The academic year 2008-2009 was the last study year for the first graduates of the Bologna 1st cycle students in engineering sciences and represented a good opportunity for the design of the new master programs. By extension, the lessons learned were applied to all the master programs in the university. The results are 52 new master programs, among which 28 have a strong research component. This last type of master programs were developed and are coordinated by the research departments and are aiming to provide a link between the diploma and the doctoral studies. Their structure is student-centered and flexible; each student can follow a full optional path but can also attend supplementary modules from the other optional modules. The curriculum involves a research project, run in the department or in companies.

The General structure of the Research and Advanced Master Programs is:

Semester I: Advances in a core field

Semester II: Advances in optional (specific) subjects

Semester III: Advances in optional subjects *or* research training

Semester IV: Research project

Having restructured the 2nd and the 3rd cycle, the study offer of the university could be evaluated and the 1st cycle study programs could be integrated in training lines.

Step 6 – Integrated Research and Education Lines: Diploma – Master – Doctorate

An analysis corroborating the university experience and resources with the needs identified in the labor market and the European trends had as result the reformulation of the educational offer. Starting with 2007, 27 new 1st cycle programs were launched and over 80 new or updated didactic laboratories were developed, supporting the quality education in the 100 diploma programs running now.

During the last year the education offer was harmonized at all the three levels, and integrated education lines were developed. These lines are gathering 2...4 Diploma programs, one master followed by doctoral studies and are able to give continuity in education, avoiding overlapping and redundancies.

The role of the university is not limited to students' initial education. An important part of our activity is related to adults training in lifelong learning programs.

Step 7 Lifelong Learning: an Answer to Economic Growth

Economic growth raises to the companies the problem of competitiveness, in terms of products (high tech), processes (low energy, pollution free) and services. This involves human resources with new or updated competencies and skills, and the Transilvania University is prepared to offer tailored programs, developed at the request of or in collaboration with representatives of different economic, social or cultural partners. Many of these courses are developed in the frame of transnational partnership projects (Leonardo da Vinci, Minerva, Comenius, Jean Monnet, etc.) or in the frame of large projects financed by structural funds.

Modules and courses, mainly at master and postgraduate level were developed in direct cooperation with companies who also as a first step of a broader cooperation.

Step 8 Joint Actions with the Economic Environment

The cooperation with companies, at regional, national, EU level, covers two major fields:

1. Education and Training

- Practical placement for diploma students
- Full curricula for master and lifelong learning study programs
- Education and training laboratories
- Laboratory testing stands

2. Research and Technology Transfer

- (Applied) Research contracts
- Joint doctoral programs
- Networking

Therefore, supporting Structures were developed and are well implemented:

- The university incubator: Products and Technologies for Sustainable Energy PRO-ENERG – hosting spin offs and SMEs
- The Centre for Technologies, Innovation and Business, CTIB – supporting the preparation for technology transfer

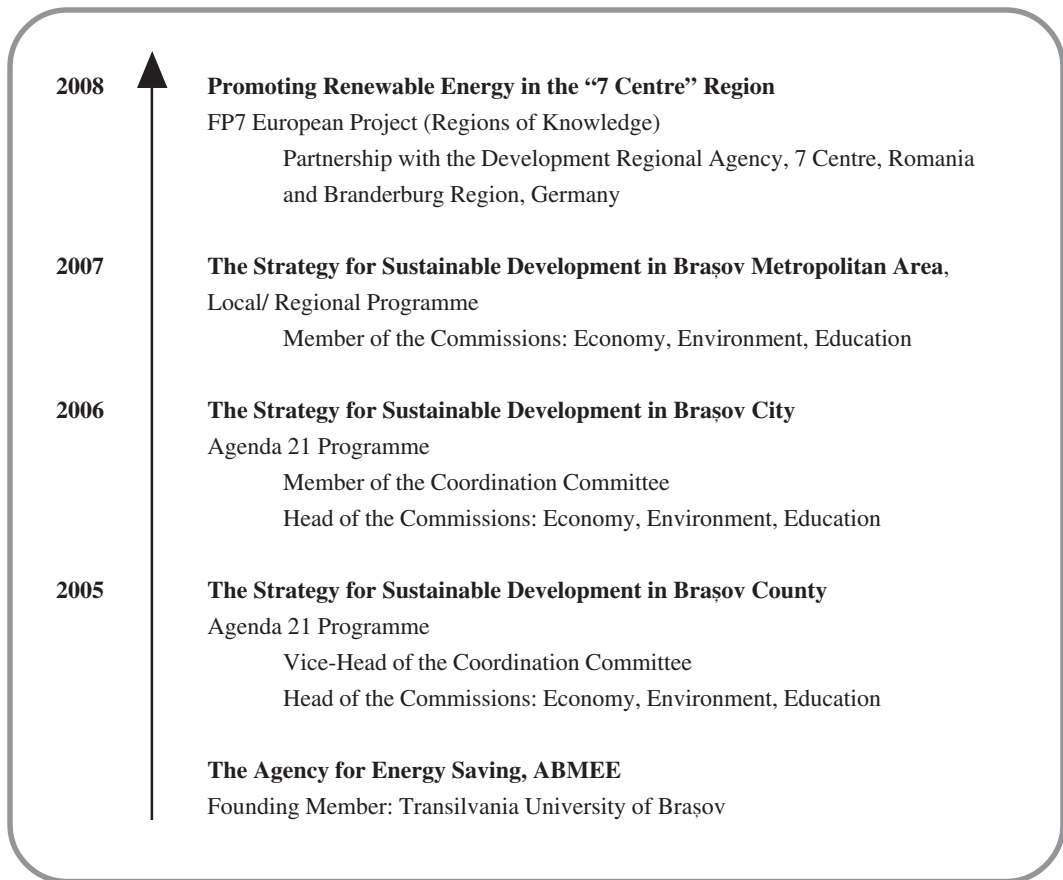
Both structures have also competencies in providing consultancy for technology transfer and intellectual property rights protection externally (the incubator) or for the members of our academic community and the doctoral students (CTIB).

Advanced cooperation is targeted to be developed with the research divisions of the national and international companies in the Pole of Excellence that will be developed in the GENIUS campus.

A fast diffusion of our outcomes in education and research is possible only with a close cooperation with the local, regional and national authorities.

Step 9 Involvement in the Sustainable Regional Development

Transilvania University of Braşov is able to offer expertise and excellence in all the major fields defining sustainable development and was invited as a key actor in defining the local and regional Sustainable Development Strategies.



These strategies have as important point sustainable energy, mainly renewable energy systems, both as niche production for supporting economic growth and as instruments in promoting clean energy and environment. The cooperation between academia, research institutes and companies in the *Center* Development Region is part of the FP7 project RenErgEuReg, where Transilvania University works along with the regional development authority for implementing the advanced solutions existent to the partners from Brandenburg, Germany.

Step 10 – International Cooperation

The Higher Education in Romania is opened to all the high-school graduates; but so it is the Higher Education all over Europe and all over the world. The choice for one university or another is the result of an analysis performed by each attendant and the quality of the education provided by the institution plays an important part in the final decision. To fully reach international recognition is a target set by our university and the international cooperation is a path supporting both, the development of the academic processes and their visibility. Starting with 1998 when Romania became eligible member of the EU cooperation program for higher education Erasmus/Socrates, our university developed strong links with more than 200 universities, research entities and companies. The cooperation, started primarily by students and teaching staff exchange was valorized in partnership for accessing projects that were developed on education, training and research subjects. Based on these were launched and are functioning, new teaching modules, study programs and teaching methodologies and, in the past four years, joint research projects. The latest was also possible due to a strong increase in the quality of the research infrastructure, as result of a core of projects targeting to update and extend the resources in the groups of excellence.

Instead of Conclusions

Developing a frame for quality assurance in a Romanian University is a strategic decision that must be formulated based on a coherent and comprehensive analysis of the existent and future resources. Implementing this strategy, making the framework function and developing the instruments take time, will and determination. Transilvania University decided to set quality as a top priority and it took more than four years to get a real confirmation that the path designed and followed is correct. This confirmation was given by the ARACIS evaluation of “High Degree of Trust” and by the National Agency for Research which confirmed that the university has the necessary resources to be accredited as an entity with research of excellence. In 2008 we started the process of international evaluation and we are looking with forward to the future. The lesson we have learned can be synthesized as follows:

- It takes time, will and competence to attend excellence;
 - It takes a careful planning and a sound management to implement the actions foreseen;
 - It takes partnership and networking to build a sustainable future
- ...but, above all, *Cooperation is the Key*.