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SELF EVALUATION REPORT



Iasi, May 2012

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A. INTRODUCTION

The international evaluation of the “*Gheorghe Asachi*” Technical University of Iasi (TUIASI) is undertaken through the Institutional Evaluation Programme (IEP) of the European University Association (EUA), within the context of major reforms in the Romanian higher education system, and specifically in accordance with the provisions of the Law on Education (Law 1/2011) and other Governmental Decisions (HG 789/2011) enforcing the classification of all Romanian universities (public and private) and the ranking of their study programmes.

As a result of the national evaluation programme of the Romanian universities undertaken in 2011, the data were collected, at the institutional and study programmes level, for the period 2006-2010, and the Romanian universities have been classified into three major categories (MECTS Order 5262/2011): a) *Advanced research and teaching universities* (12 universities including TUIASI); b) *Teaching and scientific research universities* (including teaching and artistic universities); c) *Teaching and learning universities*.

EUA, through its IEP which is included in the EQAR has been selected by the Romanian authorities to perform the international evaluation of universities, with the support of a structural funded project “*Performance in Research, Performance in Teaching- Quality, Diversity and Innovation in Romanian Universities*” coordinated by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI).

Three of the Technical University of Iasi representatives attended the workshop organized in Bucharest on January 10th, 2012 by UEFISCDI and EUA.

TUIASI University Senate was informed about the international institutional evaluation process and about the requirements presented in the “*Guidelines for institutions– Institutional Evaluation Program*”, issued by EUA. The academic elections in TUIASI took longer than expected and their finalization was important for the nomination of all the members of the Self Evaluation Group (SEG). Thus, the election of the university management structures (Administration Council members, Faculty & Departments management structures) and Senate structures was finalized with the Senate approval by the end of March 2012. Through the University Administration Council Decision, the TUIASI Self-Evaluation Group was nominated (Rector’s Decision 799/11.04.2012) and has the following members:

- **Professor Carmen Teodosiu, Ph.D.**, Vice-Rector for Research, Chairperson of SEG,
- **Professor Neculai-Eugen Seghedin, Ph.D.**, Vice-Rector for Academic Affairs
- **Assoc.Prof. Irina Lungu, Ph.D.**, Vice-Rector for International Relations and University Image,
- **Professor Nicolae Hurduc, Ph.D.**, Vice-Dean, Faculty of Chemical Engineering and Environmental Protection
- **Assoc.Prof Mariana Ursache, Ph.D.**, Head of Department, Faculty of Textiles, Leather and Industrial Management,
- **Professor Florina Ungureanu, Ph.D.**, Faculty of Automatic Control and Computer Engineering,
- **Professor Iulian Ciocoiu, Ph.D.**, Vice-Dean, Faculty of Electronics, Telecommunications and Information Technology,
- **Professor Dorina Isopescu, Ph.D.**, Vice-Dean, Faculty of Civil Engineering and Building Services,
- **Professor Gheorghe Dumitrascu, Ph.D.**, Head of Department, Faculty of Mechanical Engineering,
- **Lecturer Brandusa Robu, Ph.D.**, Faculty of Chemical Engineering and Environmental Protection,
- **Assistant Calin Gabriel Corduban**, Faculty of Architecture "G.M.Cantacuzino",
- **Cojocea Cristina**, Student, Faculty of Civil Engineering and Building Services
- **Dr.ec.jur. Petru Condrea**, General Administrative Director,
- **Prof.Luminita Saruleanu**, Secretary, Vice-rectorate Research,
- **Eng. Delia Todorean**, Secretary, Vice-rectorate Academic Affairs.

The SEG members represent the major domains of the university activities, as well as all the categories of staff and student members and management positions at university and faculty level, being able to contribute to an overall evaluation of the university through this report and to the identification of the strengths, weaknesses, opportunities and threats related to its capacity for change and improvement. The Self-Evaluation Report is the result of the process developed within TUIASI, during April – May, 2012 by SEG, co-coordinated by the Vice-rector for Research.

The data collection was performed by SEG in collaboration with all the institutional structures, vice-rectorates, administrative direction, quality assessment council, departments and services. The centralized data used for the classification of universities and ranking of the study programmes, the ARACIS institutional evaluation report were also used, as well as all the annual reports of the internal structures, or the institutional annual report as requested by the Ministry of Education, Research, Youth and Sport (MECTS). The data were analyzed by SEG within the self-evaluation process and the consultation meetings (May 2012), with reference to the content of the Report and its Appendixes, the needed feed-back at different levels: university and faculty management structures, students and academic staff representatives, Senate Permanent Bureau, Doctoral school representatives. All these inputs

contributed to the final formulation of the self-evaluation report. The university management strongly supported the entire international evaluation process, both within the Administration Council meetings and by discussions held with the administrative staff representatives. The work of the self evaluation group was supported by the institutional structures.

B. INSTITUTIONAL CONTEXT

B.1. Brief historical overview

TUIASI has the oldest tradition in the engineering field of education in Romania, continuing the heritage of Gheorghe Asachi's "Class of Engineering and Geodesy with teaching in Romanian language", founded on November 15th, 1813 by Scarlat Calimachi's legal act, within the Greek Academy of Iași. These five years courses were the first form of higher technical education in Romanian. Later on, the School developed within the Michaelian Academy (1835), and afterwards within the University of Iasi, established in 1860.

On November 7th, 1912, the Faculty of Sciences within University of Iasi was founded as an independent section of higher education for the electro-technical, applied chemical and agricultural sciences. This event represents the "birth" certificate of what later became *Polytechnic Institute of Iasi* (now "*Gheorghe Asachi*" Technical University of Iasi).

On December 3rd, 1937, the Ministry of Education issued a decision which established the "Gheorghe Asachi" Polytechnic School from Iași. On the 1st of October 1938 the school started having three faculties: Industrial Chemistry, Electrical Engineering, Agricultural Sciences (first two with the headquarters in Iasi). The first diplomas were awarded in 1940.

As consequence of the Reform Law of education (August 1948) and the decree to establish the network of higher education institutions (October 1948), the Polytechnic School from Iași was divided into "*Gh. Asachi*" Polytechnic Institute and "*Ion Ionescu de la Brad*" Agronomic Institute. The Polytechnic Institute had four faculties, with 10 specializations: Industrial Chemistry (Mineral Chemistry, Leather), Civil Engineering, Electrical Engineering, Mechanics (engineering thermodynamics, hydrotechnics, machine building, aero-naval engineering). The duration of studies was five years.

The Polytechnic Institute of Iași operated until 1990 with 6 faculties. In 1990, four new faculties were founded; they derived from the Faculties of Electrical Engineering and Mechanical Engineering. In 1993, the name *Polytechnic Institute of Iasi* was replaced by "*Gheorghe Asachi*" Technical University of Iași. In 2004, the Architecture specialization within the Faculty of Civil Engineering and Building Services, became the Faculty of Architecture "*G.M. Cantacuzino*". The educational system is organized according to the Bologna principles since 2005, as follows: Bachelor programs (4 years- engineers and 6 years- integrated studies for architects), Master of Science programs (2 years), 3 year doctoral programs (PhD) with an intense research character, post-doctoral programs and continuing education programs, professional conversion training programs and short training programs.

TUIASI is the major higher education institution in the technical fields of study in North-Eastern Romania having more than 16000 students within 64 engineering specializations (BSc), 73 Master of Science programmes, 14 doctoral domains organized at the level of 11 faculties and 10 doctoral schools with 1140 Ph.D. students, 191 Ph.D. supervisors. TUIASI has an important research dimension, with 23 accredited research/excellence centers and laboratories focused on creating and transferring knowledge, especially in multi-disciplinary high-tech engineering areas. These centers activate within national & international research grants with industry and governmental organizations, their activities and results placing our university in the Romanian top of scientific research.

In 2009, TUIASI underwent an external institutional evaluation performed by ARACIS (full member of the European Association for Quality Assurance in Higher Education – ENQA), within the European funded program "*Quality assurance in higher education in Romania within the European context- the development of the academic quality management at the system and institutional level*". The evaluation was carried out in accordance to "The methodology for external evaluation, benchmarks and performance indicators list" and "The Guide for quality assessment activities of the universities study programs and of the higher education institutions", both ARACIS standards.

After this evaluation ARACIS published the "Report on the external academic quality assessment" and ARACIS Council issued the Certificate that awarded to TUIASI the rating as of "University of High Confidence" (**Appendix 1**). It is worth mentioning the fact that the study programmes are accredited by ARACIS for the BSc and MSc levels and by CNATDCU for the doctoral level, the evaluation and accreditation procedures being established and performed through the quality assessment procedures established at university level since 2006.

The same year, 2009, TUIASI was accredited as institution of national interest for the Romanian research system (ANCS Decision 9708/2009), as a consequence of the scientific results obtained at national level for the period 2003-2007. TUIASI has been ranked being among the first 5 research universities of Romania, from performance point of view.

The recent national classification process of universities (2011), coordinated by the Ministry of Education, Research, Youth and Sport (MECTS) made a first ranking of universities according to their performance in research

and education. TUIASI was classified as “**advanced research and education**” university and ranked on the 2nd position within the “*first class*” technical universities. The evaluation report has also emphasized the unitary and very good ranking of the study programs in TUIASI, 11 study programmes being ranked in the A class and only 3 study programmes being ranked in the B class (out of a total of 14 evaluated study programmes) (**Appendix 2**).

Another independent assessment, the National Research Assessment Exercise (Exercitiul National de Evaluare a Cercetarii, ENEC) was conducted by UEFISCDI, through a structural funded project and the TUIASI obtained very good results in the evaluation of the research and doctoral programmes, with 3 of its doctoral domains on the 1st place, 5 domains on the 2nd place and 6 domains on the 4th place (**Appendix 3**).

B.2. Legal status of the institution

TUIASI is a public higher education institution with an important research dimension, member of the Romanian Higher Education System. In accordance to the Romanian legislation for higher education institutions accreditation and diploma recognition, the university operates on the principle of *not for profit*. The autonomy of the university is stipulated in the Education Law (Law 1/2011 or its previous versions)

B.3. Geographical position of the institution

TUIASI is situated in the city of Iasi, the capital of Iasi county and capital of the former historic province of Moldova, in the North Eastern part of Romania. Iasi has traditionally been one of the leading centers of Romanian social, cultural, academic and artistic life. The city was the capital of the *Principality of Moldavia* from 1564 to 1859, then of the *United Principalities* from 1859 to 1862, and the capital of *Romania* from 1916 to 1918. As of 2011, Iasi itself has a population of 263,410 (the fourth most populous Romanian city), the *metropolitan area* is home to about 350,000 residents, while the population of the *peri-urban area* exceeds 500,000 residents. Five state universities are located in Iasi, out of which three have been classified in the recent national evaluation as advanced research and education universities (“*Al.I.Cuza*” University, TUIASI and “*Gr.T.Popa*” University of Medicine and Pharmacy).

TUIASI is the only university in Iasi that benefits of a concentrated campus for education and research (10 of the 11 faculties are situated on Prof.Dr. Doc. Mangeron Street), as well as a modernized student campus with a capacity for 8500 students (Tudor Vladimirescu area) (**Appendix 4; Appendix 5**). The traditional part of the Technical University is situated on Carol I Boulevard, where the Aula, the main Library, and the Faculty of Electronics, Telecommunications and Information Technology are located.

B.4. Brief analysis of the regional and national labour market situation

The Romanian labor market faced significant changes in the economic transition process (from a centralized industry and agricultural system to a market economy) experiencing 6% increase in the employed population during the period of accelerated growth 2006 – 2008. The impact of the economic recession caused a 9% decrease of the employees individuals from 2008 until the beginning of 2009. In 2010, the trend continued at a slower rate, with a decrease of 3.98% until the end of 2010. The registered unemployment rate experienced its lowest points during 2008, at values of around 4%. In 2009 and 2010 however, the registered unemployment rate showed an increase trend, reaching 7.43% at the end of 2010. Emigration of different categories of population and the lack of foreign investors had a significant negative impact, many young people or professionals leaving Romania in order to work and study abroad. The economy of North-Eastern region is mainly agricultural, especially towards the North, even if there are industrial cities such as Iasi, Bacau and Suceava. The regional GDP per capita is the lowest in Romania, at about two-thirds of the national average. Iasi, the largest city of the region has 5 well established and competitive universities that have an important impact for the development of highly qualified human resources and for the attraction of funds through research, innovation and structural funded projects.

TUIASI has a unique profile due to its education and research areas, being very relevant for the training of engineers and architects requested on the regional and national labor market. Automation and computer science engineers, chemical and environmental engineers, mechanical engineers, civil and hydrotechnical engineers, specialists in electrical engineering, specialists in electronics and telecommunications, architects, specialists in industrial engineering, textile and leather engineering, material science engineering represent important qualification for the local and regional development, considering also the investments recently achieved. Although the economic crisis had a major impact on the labor market at regional and national level, Iasi still represents a dynamic city which can offer a good educational level and job opportunities.

B.5. TUIASI structure: faculties, doctoral schools, research centres/laboratories, academic and administrative staff and students

The Romanian Government Decision HG No. 966 from 2011(**Appendix 6**), is the most recent document that approved the TUIASI structure by nominating its 11 faculties (**Appendix 7**). The structure of the study programmes organized at faculty level (64 bachelor_engineering specializations and 73 master of science programs) and their accreditation status is presented in Appendix 8 (**Appendix 8**). According to the MECTS Orders for the accreditation of the doctoral domains, the university is considered an institution that can organize doctoral studies (IOSUD), within

its 10 doctoral schools and 14 doctoral domains (**Appendix 9**). Post-doctoral programmes are organized within TUIASI in some of the doctoral schools, with the support of structural funded programmes or research projects.

TUIASI has an important research dimension permanently focusing on interdisciplinary research, on innovation and knowledge transfer. The quality of research staff and their commitment for excellence have provided a constant dynamics of the research activities, and the recognition and visibility of our university at national and international level. In TUIASI there are 23 accredited research/excellence centers (accredited by the National Research Council, CNCS) and 9 research groups at the faculty level (**Appendix 10**) and performant laboratories (**Appendix 11**) focused on creating and transferring knowledge. These research centers and laboratories enable our research staff to apply for national and international research grants, research contracts with industry or governmental organizations, and also support the doctoral and post-doc research programmes, their activities placing our university in the Romanian top of scientific research. The School for innovation (*Scoala Ieseana de Inventica*) has a tradition of almost 40 years at TUIASI and produced nearly 65% of the Romanian patents in the last 10 years, enabling our institution to win the *Creativity Trophy* issued by the National Register of Inventions and Trademarks (OSIM) in 2006, and many prizes in international patents competitions. The management and monitoring of research and innovation activities is performed by the Center for Research and Technological Transfer (CCTT POLYTECH).

The academic staff of TUIASI is composed of 753 permanent staff members, out of which 190 professors, 208 associate professors, 233 lecturers, and 122 assistant professors, the dynamics of the academic staff for the last 5 years is being presented in Appendix 12 (**Appendix 12**). 48 staff members have temporary academic positions.

Non-academic auxiliary staff (technicians and student campus employees) includes 341 members, while the administrative staff comprise 477 members.

The students enrolled at TUIASI are as follows: 11418 in the engineering programmes (Bachelor), 3432 students in the Master of Science programmes, 823 PhD students and 132 post-graduate students in educational programmes. Apart from these students, a number of 61 post-doc researchers activate with support of research programmes and structural funded projects (**Appendix 13**).

C. BODY OF THE REPORT

SECTION I. NORMS, VALUES, MISSION AND GOALS

I.1. Norms and values

All activities conducted within TUIASI are in accordance to the government and University legal rules and other social and economical conditions.

The University Charta (*Appendix 14*), that outlines the role of the University and how the University should be governed, was approved by the Senate of TUIASI and by MECTS on 03.10.2011. The University Charta is drawn up in accordance to academic tradition, and mission of TUIASI as an university that focuses on Excellence in Research and Education, competitiveness at national and international levels and contribution to the knowledge based society and development of the socio-economical environment at a local and regional level. Most of regulations, procedures, methodologies, instructions, etc., which are stated in the University Charta, are contained in the Standard Operating Procedures Manual (*Appendix 15*) for the evaluation and quality assessment as well as in the operating procedures.

As a signatory of the “Magna Charta Universitatum” of Bologna, TUIASI also operates in accordance to its fundamental **principles and norms**, being aware of the “*necessity to continuously adapt to the changing needs, society's demands and advances in scientific knowledge*”.

Having the aspiration to be a prestigious technical university, not only in the national area but also in the European area of higher education and research, TUIASI has a set of **values** that guide its present and future activities: **performance, competitiveness, creativity, ethics, recognition of merit, community** (*Appendix 16*) and assumes the commitment to excellence in education and research, quality assurance and ethical values.

I.2. Mission, vision and goals

As a “*first class*” university, TUIASI is an advanced research and educational institution whose **mission** is to carry out specific activities – in the local community and at regional, national and international levels – of innovative creation and knowledge implementation in the fundamental field of Engineering Sciences as well as in interdisciplinary and complementary areas, as stated in the University Charta (*Appendix 14*).

To create and exploit innovative knowledge, the University assumes:

- the role of transmitting knowledge to new generations; the role of training the undergraduate, master, PhD and post-graduates students, stimulating thinking and creativity to provide real opportunities in labor market competition; at the same time, the University addresses the entire society, for education and lifelong learning according to the worldwide developments in science and technology;
- the scientific research activity, as an inseparable part of the instructive - formative process, to contribute to the technological, economic and social - cultural progress in the sense of sustainable development and evolution towards the knowledge based society.

The main instruments for achieving the University mission are:

- a) The selection of teaching and scientific research staff and substantiation of their statute on the principle of inseparability between teaching and research activities;
- b) Creating and guaranteeing of freedom and necessary conditions for students at all cycles to reach their objectives in terms of professional formation and culture;
- c) Encouraging the mobility of staff, researchers and students in other universities at national and international levels, for documentation, for information exchange and for developing joint scientific initiatives, for applying a general policy for recognition of studies and validation of titles, with the preservation of the traditions and historical origins of the TUIASI education;
- d) Creating collaborative partnerships with the social - economic and / or research institutes to help students training according to the requirements of economic and social development.

The university contributes to the formation of engineers with high qualifications, able to quickly and efficiently respond to requirements of innovation, research and economic development. At the same time, the university carries on programs for continuous upgrading of engineers professional skills, required by global changes in social environment.

The university is aware of its duties at national and international level. The University has a large opening towards the European system of education and research values, and aims to join the European dimensions of engineering education, to develop the curriculum, to join the mobility schemes and the integrated programs of study, education and research.

TUIASI has resources of intelligence and creativity, as well as the necessary competence for accomplishing the complex mission to generate, preserve, disseminate and apply the accumulated scientific knowledge. It is concerned with establishing a system for quality assurance and academic excellence in teaching, scientific research and education, a system based on the criteria and methodologies compatible at European level.

TUIASI **vision** for its future development relies on consolidating its position among the elite of Romanian advanced research and education universities and increasing its visibility and role in the European area of higher education and research.

For the accomplishment of the undertaken mission, TUIASI operates under the **Strategic Plan** (*Appendix 17*) which is currently revised for the period 2012-2016 in accordance to the Rector's Management Program (*Appendix 16*), including the University's strategic goals that are implemented through the Annual Operational Programs, established at all the management levels such as: university, vice-rectorates, faculties, general administrative directions, departments (*Appendix 18*). Considering the results obtained in the previous period presented in the Report on Institutional Internal Assessment -2009 (*Appendix 19*) and in the Annual Report on the University State, 2011 (*Appendix 20*), TUIASI has established the strategic **goals** for the next period which are, in essence, the following:

- continuous improvement of the system for quality assurance and academic excellence in advanced research and education, based on criteria and methodologies compatible set at European level;
- strengthening the academic freedom, honesty and integrity, independence in thinking, participatory leadership in all activities, fighting against discrimination;
- support and development of scientific research activities, of specific infrastructure so as to ensure competitiveness and international visibility, respect of democratic values and moral standards, academic freedom;
- encouraging development of staff and students according to their professional competencies, talents and aspirations;
- adaptation to national and regional educational needs, both at the scholar and post-graduate training level, capitalization of the experience gained and facilitating access to modular programs with credit accumulation and transfer possibilities;
- unitary development of the three cycles of higher education (Bachelor, Master and PhD) and promotion of foreign languages studies as well as postgraduate educational and post-doctoral programs;
- identifying and attracting sources of extra income at the same time with efficient expenditure.

The strategic plan is formulated according to the possibilities and aspirations of academic community, by consulting the faculties, departments and services of the university structure as well as Senate debates and decisions. The strategic plan is elaborated in accordance to the requirements of future development, starting from the human and material resources as well as the educational and research offers and is updated through the operational plans, based on legislation changes and actual development opportunities.

I.3. Governance and management

I.3.1. Centralization and decentralization

In Romania the university autonomy is ensured by the Romanian Constitution (Art. 32. line 6). TUIASI is an autonomous university within the limits given by the National Education Law (1/2011) and other Ministerial Orders or Government Decisions. As an autonomous institution, TUIASI has freedom of decision regarding the mission,

institutional strategy, structure, activities, teaching, scientific, administrative and financial management, as well as in its relations with similar institutions in Romania and abroad (*Appendix 14*).

Being an active university, firmly anchored in the social-economic development, TUIASI requires a modern, flexible, entrepreneurial management, capable to find solutions to challenges received from outside the university, capable to transform these challenges in the benefit of the academic community as a promoting center for university affirmation and progress.

Academic and administrative management are two fundamental components of university management, which have seen a remarkable dynamic in recent years in Romanian higher education. A university that performs in teaching, research and service to academic community and society inevitably becomes an agent of change and needs a proactive and entrepreneurial approach. Thus, TUIASI university management assumes the use of autonomy and the efficient exploitation of all human, financial and material resources so as to contribute to institutional sustainable development

Decentralization of higher education has had two important consequences: development of the university autonomy and functional repositioning of universities in relation with the Ministry (MECTS). In essence, this means that universities received from the Ministry the power to decide in a number of areas and especially on their own future.

The actual organizational and decision-making structures of the university, resulted after the last academic election process (December 2011 to April 2012), are reflected in the new Organization chart (*Appendix 21*). In this new context, the Senate, led by its President, is the coordinator of the deliberative function of the university (*Appendix 22*) while the executive function is ensured by the Administration Council (formed by Vice-rectors, faculty Deans, General administrative director, student representative, having as invited members the legal advisor, the union leader) led by the Rector.

Through the decentralization within the university, the faculties are free to develop their own strategic and operational plans considering the priorities of the TUIASI strategic plan, to determine the content and evolution of the study programs, to manage the allocated financial resources, to establish the human resources policy.

I.3.2. Human resources policies

To ensure a high qualified academic staff, the following will be taken into consideration:

- Selection of future permanent or temporary staff out of the graduates with best professional results, as well as PhD students, specialists in research, design or production; the selection is based on contest, pursuing the performance in teaching and scientific activities;
- Selection of MSc and PhD students, for participation in research related activities;
- Promoting a climate of success where the performance is recognized and rewarded (i.e. salary increase for academic excellence);
- Supporting and encouraging the improvement of teaching staff and students competencies, personal development and living conditions by using all means: PhD and post-doc fellowships, grants for documentation, mobility and exchanges (*Appendix 23*), training programs, modernization of the student campus, etc. through European structural funding (*Appendix 24*) as well as for research conditions and infrastructure (*Appendix 25*).
- Improving the system for teaching staff assessment used for job contests or for taking decisions related to differential payment, according to the performance.

I.3.3. Institutional quality assurance policy

In 2009 TUIASI underwent an external evaluation process by ARACIS, achieving a "*High Confidence*" rating (*Appendix 1*). This was due to the engagement of the entire academic community in the process of reconsidering the problem of quality in all the university processes. Thus, for the period 2006-2011, within the university were accredited or provisionally approved, all Bachelor and master programs. According to the prestige achieved in time and to its public image, TUIASI has demonstrated a permanent interest for a high quality academic activity, in all sectors: teaching, scientific research, economic and financial, international relations, work with students, social services, etc.

Major changes in university policy, in terms of quality, occurred at the same time with the publication of Quality Law and ARACIS Methodology. In 2005, as a result of these documents, it became mandatory for our university to plan and organize quality assurance activities supervised by The Commission for Quality Assurance and Evaluation (CEAC). The Commission is directly subordinated to the Senate, and its main tasks are to coordinate the development of procedures and quality assessment activities and to elaborate an annual report documenting quality assurance at university level. These reports are mandatory for the Romanian universities to obtain the main and complementary financing packages from the state, and to participate in the grants competitions for scientific research that are funded by the national budget.

The aforementioned law stipulates that each Romanian higher education institution is responsible for the quality of its own educational services and for quality assurance. The Rector of our university is directly responsible

for quality management, as written in "Gheorghe Asachi" Technical University Quality Assurance Policy Declaration (*Appendix 26*).

The main strategic objectives of the university in quality assurance in the fields of education and research:

- Adopting a process based approach in developing, implementing and improving effectiveness of quality management system in order to increase customer satisfaction by fulfilling its requirements;
- Designing the study programs on the basis of student needs as well as on understanding and considering the needs and expectations of stakeholders;
- Diversifying educational offer as a response to societal needs in accordance to the requirements of the labor market ;
- Developing teaching and learning methods to ensure excellence in education.
- Identifying the priorities in research at university level and establishment of the research strategy and objectives at all levels (university/faculties/departments, research centers and doctoral schools) for quality assurance of research resources and exploitation of research results.

1.3.4. Funding

As a state university, TUIASI funding is made of budgetary allocations by MECTS at the proposal of the National Council for Financing of Higher Education (CNFIS) and other supplementary funds provided through research grants based on competitions at national (CNCS, ANCS) and international level. Budgetary funding of the TUIASI is made on the basis of institutional and complementary contracts with the ministry.

The distribution of basic financing to faculties, departments, administration, library, occupational safety fund, university marketing fund is established by the decisions of the Administration Council and University Senate (*Appendix 27*). It should be mentioned that the overall budget funding has been restructured according to the university classification and ranking of study programmes as provided through the Institutional Contract of 2012, as detailed in Section II.

It should be noted that research funding at national level as a percentage from GDP, has suffered a significant decrease in the last 4 years (from 0.6% in 2008 to 0.15% in 2011). In these circumstances, TUIASI is trying to supplement the temporary lack of financing in certain directions by own incomes or accessing structural funds or international research programmes.

The own budget incomes consists primarily of tuition fees, sponsorships, rents, overheads of research contracts etc. A significant part in the university budget is represented by the funds from European programs as well (*Appendix 24*).

Each year, the Senate approves the structure of the budget, per sources and destinations, the budget implementation for the previous and current year.

1.4. Academic profile

The university structure and its activities prove the dimensions of the professional coverage and show what the university offers for the young engineers' career.

The university provides **Bachelor, Master and Doctoral** programs, as well as post-doctoral programs with an intense research character and other postgraduate and continuing education.

In the field of **educational activity**, the main objectives are:

- promoting academic programs to respond to developments on the labor market at international level, allowing the assertion of students' personality, developing their intellectual ability and professional knowledge, according to their talents and aspirations;
- increasing the offer of postgraduate training programs (retraining, specialization, professional conversion) in self funding regime;
- increasing education and research quality by accreditation of Bachelor, Master and Doctoral programs, considering evaluation according to the highest level quality standards;
- attracting high school graduates to the technical university through information on the programs of study offer, on the engineer's importance in the knowledge society, on the conditions of study and life for our university students;
- harmonizing the study programs with those of similar universities in the country and in Europe, so that credit transfer system operates in student mobility;
- using the opportunities offered by the European programs to achieve exchanges of staff and students in order to improve the methods of teaching - learning and the quality of education.

In order to establish new Bachelor, Master and Doctoral programs, the university considers the labor market dynamics in accordance to the classified catalogue of the Ministry of Labor and Social Protection, defines the graduate's qualifications and demonstrates the capability to respond to student formation and employers requirements.

TUIASI encourages the development of university Master and postgraduate programs in partnership with other institutions or companies, as well as universities abroad.

The **scientific research** is an important university dimension, with a significant place in all university activities, standing at the base of a high professional level. Research is performed within research centers/groups/doctoral schools as a possibility to enhance the professional development, visibility and co-operation at national and international level. It also represents a basic criterion for academic assessment and career advancement.

The University priorities and goals in **research**, included in the Rector's Management Program for 2012-2016 (*Appendix 16*), Report on Institutional Internal Assessment- 2009 (*Appendix 19*), in the Report on the university state 2011 (*Appendix 20*), and in the Vice-Rectorate for Research Annual Reports (*Appendix 28*) can be summarized by the following:

- Improvement of research by developing interdisciplinary research projects through innovative activities and knowledge transfer;
- Human resource development, especially of young researchers, by correlating research with development of master, doctoral and postdoctoral programs;
- Improving research infrastructure to support advanced research activities;
- Developing national and international cooperation partnerships to improve performance in research and teaching staff visibility;
- Supporting research, development and innovation by improving the performance of research/ excellence centers and Research and Technology Transfer Center – Polytech;
- Integration of TUIASI into a communication system regarding strategies and topics of scientific research for national and international competitions for granting projects;
- Initiating and supporting performing scientific research programs through collaboration with internal and external partners and participation in national and international contests, to acquire scientific research projects;
- Stimulating the interdisciplinary research oriented to advanced technology or priority in research areas;
- Development of scientific seminars, conferences, reports, national and international scientific conferences necessary to disseminate the research results;
- Improving the training of young teaching staff by doctoral programs in co-tutorship with other universities in the country and abroad,

To **promote the visibility and cooperation** locally, regionally, nationally and internationally, TUIASI is considering:

- Developing and maintaining partnerships with economic and social environment, with the secondary school system, with local and regional authorities and the media;
- Developing an image strategy, including the university brand that would represent the true innovation and scientific potential of our university;
- Making a more aggressive marketing strategy to promote all educational and research programs carried out within the university;
- Developing and maintaining international research partnerships, collaboration, mobility;
- Promotion of the specialists from the University to occupy positions in higher organisms (MECTS, ARACIS, CNCS, CNATDCU etc.) or the collaboration with relevant governmental local and regional bodies;
- Development of cooperation in the Community program 'Life-Long Learning (LLL)/ Erasmus by signing new bilateral agreements with EU partners.

SECTION II: GOVERNANCE AND ACTIVITIES

In accordance with the European good practice, the governance of TUIASI stands for the direct and subsidiary involvement in the decision-making process of all members of the university community. The governance is the type of authority that correlates human activities with material resources in order to reach the proposed objectives.

During the last years the university has been under a permanent education reform, following the European actual goals and objectives to develop new models for institutional governance. The new governance and leadership organizational outlines adapted to the trends and diversification of higher education have emphasized the roles for both maintaining institutional autonomy, harmonizing institutional standards, and for expanding higher education with goals related to the market based models of education. Stressing upon the quality of learning and leadership within universities, the management must also provide both a durable centralized administrative guidance and an active decentralized faculties involvement in the governance performance.

The governance is based on a number of fundamental principles of the academic environment such as: academic freedom, efficiency, decentralization, and excellence. Accordingly, these four principles support the faculties' participation in quality standards and curriculum development, and in faculties decision – making -decision act regarding the academic personnel as main actors on the scene of education.

II.1. Governance and management

II.1.1. Analysis of management practice

Prior to the current Romanian education Law 1/2011 the Rector was elected by the University Senate. The Vice-Rectors were appointed by the Rector and confirmed by the Senate. At the faculties level, the Deans were elected by the Faculties Councils that included professors and students appointed by the departments and by student organizations, respectively. The Senate Board also included the Union Leader and the Legal Advisor.

The managerial practices of the university have undergone major changes since 2011. The Procedure for Academic Elections (Appendix 29) and the TUIASI Charta (Appendix 14) have been upgraded according to these new legal regulations. Law 1/2011 clearly states that the University Administration Council is separated from the deliberative entity, i.e. the University Senate. The access of the academic staff to positions in these governance structures is based on principles of democratic values and participation.

As a consequence, at the end of the year 2011 and the beginning of the year 2012, the department directors and the members of the Faculty Councils were elected. The University Senate Members were elected by the entire academic community. The Senate has a President, a Permanent Bureau and seven operational committees (Appendix 22). The Election procedure of the Rector was subject to a referendum. The teaching staff decided that the Rector should be elected through universal suffrage. The Rector appointed six Vice-rectors who were further confirmed by the Senate. The Faculty Deans were nominated after a public competition organized by the Rector. The competition was based on a multipart interview related to own managerial program and faculty strategic plan. The panel consisted of the Rector and Vice-Rectors. A quarter of the Senate and Faculty Councils members is represented by students (elected by the student organizations, according to the principles of representativeness). The structure of the internal governance is performed by the Administration Council, composed by Rector, Vice-Rectors, Deans, the General Administrative Director, a student representative, and the Legal Advisor and the Union leader, as invited members.

II.1.1.1. Academic activities and policies (teaching and learning, research)

The academic activities, educational policies, and scientific research are proposed, approved, coordinated, controlled and monitored at different decision-making levels of the university. There are internal procedures and working methodologies that control all these aspects (Appendix 15).

The major decisions are taken by the University Senate, on the motion of its Committees, and/or the Administration Council. According to the TUIASI Charta, the Administration Council proposes the long and medium-term strategy to the Senate. The Senate approves the methodologies for graduation procedures, the academic and research general outlines, and the founding or closing of certain faculties, departments, institutes, and research centers. The Administration Council approves new study programs and may propose to the Senate to cancel out academically or financially inefficient educational programs.

The Rector manages the academic activity of the university, its strategic development, scientific research, and the quality assurance strategy. The Vice-Rectors recommend the educational strategy through undergraduate, master and doctoral programs and coordinate the entire research and innovation activity of the university.

The doctoral activity is coordinated by the Director of the Doctoral Studies Council.

The Deans coordinate the educative and research processes at faculty level.

The Faculty Councils approve the academic programs organized by the faculty, the strategic plans, and yearly operative plans.

Collaboration relationships between faculties include educational and research interests. A number of educational fields are coordinated by a set of distinct faculties and the staff of several research centres belong to several faculties as well. This particularity might enable joining of efforts in quality assurance.

The department directors coordinate the entire educational and scientific research activity of the department, and the Council of the department recommends and elaborates study programs on a yearly basis, approves the curricula for the disciplines of the study programs managed by the department, the academic and research general outlines and organizes the educational and research activities of the department staff.

At faculty level, the doctoral activity is coordinated by the Director of the Doctoral School and the Council of the Doctoral School.

II.1.1.2. Funding issues

In the last decade management of the financial activity of TUIASI was fundamentally marked by the new financing system for the higher education public institutions in Romania. The internal resources planning and allocation processes take place annually, empowering the university to achieve the operating plan and budget. The global funding of TUIASI is an accumulation of funds allocated out of the state budget and of the extra-budgetary income; the university autonomy allows using all of these resources according to the university managerial plan. All funds obtained from various sources are assessed as identifiable according to the Order of the Ministry of Education, Research, Youth and Sports no. 3998 from May 5th, 2012.

In 2011 the state funding was 82.491.004 RON, 69% of which depended on the total number of students, and the remaining 31% was based on quality indicators.

Since 2012 financing principles are fundamentally related to competition criteria, as evidenced in the University classification and ranking of their study programs (Appendix 2). Thus, it includes two components: basic funding depending on the number of enrolled students in each classified study program, and a supplementary one mainly related to research performance. Complementary, there are also internal regulations regarding the distribution of the supplementary funding.

The allocated funds out of the M.E.C.T.S. budget, the basic and supplementary ones, are distinctively highlighted in the institutional contract, that specifies the total number of students for each hierarchy level, cycle and teaching language.

The level of the allocated basic funding of faculties, departments, administration, Library development, Labour Safety, and University Marketing is established by the decision of the Administration Council and approved by Senate.

There is an additional financing of doctoral grants for the PhD students enrolled in the 2011-2012 academic year.

The funding is distributed according to the Order of the Ministry of Education, Research, Youth and Sports, no. 3998 of May 5th, 2012:

- a) Basic funding (FB): 68%
- b) Supplementary funding (FS): 30,50%, out of which:
 - Supplementary funding based on excellence (FSE): 25%;
 - Preferential funding for master studies and doctoral studies in science and advanced technologies, in programs taught in international languages and co-tutoring of doctoral studies (FSEP): 2.50%;
 - Development of the institutional capacity and management efficiency (FSCM): 0,00%;
 - Playing an active role at the local and regional level (FSL): 3.00%.
- c) Institutional development: 1.50%

Based on the budget, the Administration Council foresees and authorizes the amount per each task/activity. This decision-making procedure serves the University's policy, established by the Senate and implemented by the Rector. The distribution of the university funds towards faculties follows the number of equivalent students and the quality indicators. This decision has been made since 2002, in order to efficiently improve the funds management at faculties level. Therefore, the Deans have a high managerial authority, coordinating the human resources, education and research policies, according to the allocated funds. In the future it is possible to see a higher independence in the fund distribution up to the department level. Starting with the academic year 2012-2013 and according to Law 1/2011, the financing of the universities will be done based on the multiannual grants, having a positive influence on the quality of education.

II.1.1.3. The selection and promotion of academic and administrative staff

There are procedures and methodologies that are applied in the process of promoting the academic and administrative staff within TUIASI.

At the request of the Administration Council, the Senate approves the promotion of the academic and administrative staff, on a competition basis.

The procedure of promoting the teaching staff takes into account the educational and scientific performance, and the reputation of the candidates (Appendix 15).

The departments councils recommend the occupancy of vacant academic positions through competition and approve the competitors records. The faculties councils approve the filling of different teaching and research positions, requested by departments. The Vice-Rector in charge with academic affairs coordinates the organization of the competitions. The Senate approves the competitions methodology and validates their results and periodically evaluates the human resources.

II.1.1.4. The selection of students

- a) The admission in the University study programs

The admission of candidates is regulated by Law1/2011 and related documents. The university developed specific procedures (Appendix 15) implement them according to their particular requirements.

- b) The election of the students representatives

The selection of the students for occupying different representative positions in the governance structures of TUIASI is performed exclusively by the student associations, based on their own regulations and methodologies. These regulations respect the principle of representativeness.

II.1.1.5. Development of service to society

The University is contributing to the welfare of our society using its most efficient tools, student centered education, training and research.

Primarily, the university has the role of training qualified graduates able to work in the fields of industrial engineering, research or education. TUIASI is also involved in programs of continuous training of the labor force. Since April 2012 the self-evaluation reports have been issued in order to evaluate several post-graduate programs of continuous training. These reports have already been forwarded to the Ministry for final evaluation.

TUIASI has also offered extensively consultancy and expertise to business operators in order to solve and assist specific technical and scientific problems (Appendix 30).

II.1.2. The involvement of students and stakeholders in institutional governance

In the spirit of student centered education, the student is no longer perceived as a passive element in the process of education and training. The students have to be active partners in the university institutional governance. The active participation of students is taken into consideration, besides the actual student profile and the responsibility, as well as volunteering. The TUIASI stated the students' involvement in all leadership structures of the university.

The students are represented in the Senate and in the Councils of the Faculties in a proportion of 25%, and elected by the student organizations. There is also a students representative in the Administration Council, the Ethics Committee of the university and in the Committee for the Quality Evaluation and Assurance. The students are part of the quality sub-committees at the faculty level and are also included in the specific committees of the Senate and of the Faculty Councils.

The student hostels of the student campus "Tudor Vladimirescu" are managed by student committees and supervised by faculties vice-dean in charge with student-related issues. These hostel committees are led by a president selected by students poll.

At the university level, the Committee assigned with social and student-related aspects organizes periodic meetings. This committee is coordinated by the Vice-Rector responsible for student issues, and includes the representatives of the students (senator students, hostel presidents, leaders of student organizations acknowledged by the university) and the vice-deans responsible for students-related issues.

The students are also actively involved in promoting the university (the University Caravan, the graduates day, educational and research competitions, culture and sports-related competitions), moreover they are partners in elaborating development strategies for the university.

The degree of the students involvement in the management process is high, assuring their active and extensive participation in the governance of TUIASI.

Due to the importance of connecting the university and the student, the TUIASI Charta, foresees a new leadership position, the Vice-rector in charge with student affairs.

Stakeholders are important partners of the departments, faculties and universities. They are involved in all practical and scientific events, by patronage, as participants in workshops, conferences, exhibitions, etc. In fact, according to the law a stakeholder representative has to be involved in the Committee for Quality Evaluation and Assurance.

External stakeholders offer to students either financial support, as partnerships, or scholarships. A number of stakeholders offer high performance equipment for research labs, internships, or funding for student competitions or special courses taught by industry staff.

II.1.3. The human resource policy

The human resource policy of the university is generally fitting the current needs of the institution. In selection and promotion of staff members, the principle of equality of chances is valued. The structure of the teaching staff is well balanced between professors, associate professors, lecturers and assistants (Appendix 12).

There are internal regulations regarding the promotion of both teaching and administrative staff members, and operate once the vacancies are open for competition. (Appendix 15).

The human resource policy is applied within the actual financial constraints imposed by the national government. These constraints can be judged from two points of view. First of all, in the last couple of years, the Ministry of Education has not approved, new competitions for vacancies. Today, the minimal standards of promotion, imposed by the CNATDCU in 2011, are restrictive for certain domains for which, traditionally, the results of the scientific research were finalized through other imposed types of activities but those anticipated in the minimal standards. The human resource of the university is also affected by the fact that an open teaching position may be filled only after seven positions become available by retiring or system leaving. This regulation has led to a diminishing of the received funds by the university from the government, due to the fact that the institution had not met certain quality standards regarding the percentage of the young teaching staff.

II.1.4. The institution's involvement in inter-institutional cooperation

TUIASI has a traditional cooperation with national first class ones. The TUIASI cooperation relationship includes also research institutes, companies, agencies, various enterprises.

The university plays an important role in the development of the city and the region, as many important international companies have developed branches in Iasi, based on the scientific role of TUIASI.

The TUIASI has relevant collaborations set with the City Hall, the District Council, the Prefecture, the Chamber of Commerce and Industry and important local NGOs. It also has traditional connections with the German Cultural Centre, the French Cultural Centre and the British Council; originated the European Centre for Education and Culture, which e.g. will participate in the characterization of the cultural landscape of Iasi city. Within the university, various institutions develop permanent activities regarding national and international cultural and scientific issues, e.g. the branch of the Academy of the Romanian Scientists, the National Inventics Institute, the research branch of the INCDT-COMOTI (National Research & Development Institute on Gas Turbine Systems).

The cooperation relations of the TUIASI include also international education and research partnerships and programs for students exchange (Appendix 23).

II.1.5. How do the actual management policies reflect the institution's missions and goals, and how could discrepancies between the goals and reality be amended and strengths be reinforced?

The current management policies are fully related to the mission and the objectives of the institution, as stated in the Strategic Plan and the Rector's Management Plan. Moreover, the Deans have management plans in accordance to the rector's plan, this being one of the evaluation criteria in selecting Deans by open competitions. The Vice-Rectors are appointed by the Rector and have the duty of applying the Rector's management plan.

The university is highly adaptive to the challenges of the society. It is receptive to the social, political, economic and cultural changes. The Administration Council is reacting to all of the vital signals that appear on the labor market and periodically analyzes the trends of the social and economic environment, identifies possible threats concerning the strategic objectives and considers alternative solutions for the future.

Analyzing the active population dynamics for the next ten years (using data offered by the National Institute of Statistics) it was found that in 2000 the North-East region had 2.044.000 active people, while in 2010 their number was only 1.793.000. The decrease will continue in the future, but will not dramatically affect the labor market. A very important aspect is the decrease of the birth-rate, which was severe during 1991-1992. In 1988 the number of newborns was 380.043, while in 1993 this number was only 249.994. The birth-rate continued to decrease: in 1998 237.297 new borns were registered, while in 2002 210.529 new-borns were registered. Another very important data in the future will be the number of high school graduates who are granted the baccalaureate diploma. In 2010 the graduation percentage was about 79%, while in 2011 was approx. 50%. Based on the analysis above, it is expected that the number of high-school graduates will lower and certain measures to promote the image of the university within high schools are compulsory. On the other hand, the situation of the university on the top list of the Romanian universities will favor an increase of candidates number, due to the high reputation of the institution.

Other studies concerning the acceptance of the graduates on the labor market are currently conducted (within the strategic project "The Graduates and the Labor market", carried out in partnership with the *Incher Institute* of Kassel, Germany). Several factors have been analyzed, such as the traceability of the graduate students within the labor market, their migration from a geographic area to another, their expectations, etc. Conclusions concerning the way that the institution should react will be drawn at the end of the study.

II.2. Academic profile

II.2.1. Education

All educational programs of TUIASI have their curricula design based on the identified competencies, together with the representatives of employers that are relevant in every domain (Appendix 15). The educational programs are correlated with similar educational programs in Romania, benefiting of participation of all Romanian universities within the strategic project "The development of an operational system of higher education qualifications of Romania – DOCIS", and also of international projects that consist in harmonizing the educational programs within each field (e.g., EUCEET I,III, III Program – European Civil Engineering Education and Training 2001-2010 – for the civil engineering domain).

Note that TUIASI has a tradition of over 35 years in developing the creativity and industrial property through courses addressed to the students, initiated by the Department of Electrical Machines – tools and equipment, now within The Faculty of Electrical Engineering. In the past ten years this real culture of creativity has generated over 740 students patent applications, out of a total number of 1204.

During the last four years doctoral studies have extended and developed especially in full-time doctoral programs (Appendix 31), correlated with the institutional development.

Under the last five years economic conditions, the number of students coming from disadvantaged social and economic environments has been rising, and as compensation, the university is directing the social assistance

studentships to sustain and motivate the progress in education. The mature students, being over 30 years old, exist in all three cycles of education, the highest rate being in the doctoral education (for the year 2010 – 50%), followed by master studies (20.4%). The university intends to strategically promote education for the mature population, focusing on the culture for quality in all its programs.

The promotion of new educational technologies is evidenced by the use of the Moodle platform as a support for those who wish to develop better communication with the student classes. For the time being, the university did not initiate blended-learning education programs, because distance-learning courses are not currently offered by the university. The use of the platform for the purpose of generating communication in a virtual environment with the students from all of the faculties is anticipated, where a significant stage is represented by the participation of 67 members of the teaching staff in two rounds of nine-months training programs within the project of “DidaTec – The university of initial and continuous training of teaching staff and of trainers from technical and engineering domains”. The support Centre DidaTec created within the University and affiliated to the Vice-rectorate for academic affairs will support the continuous process of training, after the completion of the project, i.e. August (Appendix 21).

The adaptation of the teaching staff to the new educational approaches that reside from the strengthening of the Bologna system is encouraged through massive participation in POSDRU programs that are meant to develop supplementary competences in technical practice activities and research in all academic fields, as well as entrepreneurship and management related activities (Appendix 24).

The development of the human resource is enhanced by the participation to a Mentoring Program (twelve teaching assistants and three mentors that are experienced professors with remarkable results in the academic activity), through the same DidaTec project, having the intention of making this formation permanent and to cultivate in young people a harmonious and well-structured professional development in relation to the University requirements and personal development needs.

The University is involved in the local and regional community through activities of continuous training for the professional and technical staff of high school education, by initiating e-learning activities (CONCORD, E-prof – Appendix 24).

The internationalization of the courses, as a major objective of TUIASI (Appendix 16), is currently practiced through two undergraduate programs (Civil Engineering, Electrical Engineering and Computers) and two master programs (Structural Engineering, Environmental Management and Sustainable Energy), taught in English. Other programs are currently developed, aiming at attracting a larger number of European students and favoring the mobility of the students.

The new Erasmus for All (E4A) program intended to start in 2014 will benefit of additional financial resources, and thus it will allow a reconfiguration of the activities beyond simple mobility.

II.2.2. Scientific research

II.2.2.1. National context

In supervising the university’s scientific research CNCS (National Council of Research) applies the EU philosophy through the following quality principles:

- The ability to attract funds for research activity;
- The ability of universities to instruct highly qualified human resource for research;
- The relevance and visibility of research results;
- The ability of universities to design/develop products, innovative technologies for business;
- Institutional capacity to conduct and support advanced scientific research activities.

II.2.2.2. “Gheorghe Asachi” Technical University of Iasi Context

(Appendix 20)

At national level, the institutional evaluation of Romanian universities is completed by ARACIS (The Romanian Agency for Quality Assurance in Higher Education). TUIASI is rated in the first category of advanced research and education universities. The TUIASI mission resides in tutoring creative activities and innovative methods of knowledge transfer to society. The TUIASI mission is completed inside the fundamental, interdisciplinary and complementary fields of Engineering Sciences, Architecture and urban development, and it is committed to society, at regional, national and international levels.

The capacity and quality of the scientific research of TUIASI has also a non-formal international recognition, for instance the critical analysis of published quality scientific works, included in the Normalized Impact Report – SIR World Report 2011, assigns TUIASI on the first place in Romania and on the 38th one respectively, in Eastern Europe (http://www.scimagoir.com/pdf/sir_2011_world_report_ni.pdf).

The strategic targets of TUIASI research activity pursue the implementation of the specific quality principles of EU research philosophy and stated by CNCS.

The TUIASI research is managed by the Vice-Rectorate of Scientific Affairs, is monitored by the Scientific Research Council, and is supported by the „POLYTECH” Research & Technology Transfer Centre (<http://polytech.tuiasi.ro>).

POLYTECH provides both:

- consulting support activities related to the legal framework, monitoring of research outputs, financial statements of each research contracts, checking the fulfillment of contractual obligations, remuneration of research staff, revenues from research contracts (with/without VAT);
and
- specific support activities related to invoices, management of research dedicated acquisitions, evidence of research results, correspondence with the contracting authorities, the third parties and collaborators, building of a research data basis crucial in accomplishing all required research reports of TUIASI by the demanding forums; completion of the Statistical Report.

Scientific research is performed independently by 23 research centers, out of which 14 are accredited by CNCS and 4 are centers of excellence in research. The dynamics of scientific research results is presented in Appendix 20. Since 2005 the Doctoral Schools are organized at faculty level, and have a centralized management inside the Department of Doctoral Schools. Through this department, 6 Strategic Projects intended to doctoral and post-doctoral studies (POSDRU) have been established, with a value of approx. 20 million Euros (Appendix 20). Within these projects, 358 doctoral and 58 post-doctoral individual research programs are completing.

TUIASI disseminates significant research results through two Scientific Journals, namely the *Bulletin of Polytechnic Institute of Iasi* and the ISI-rated *Environmental Engineering and Management Journal* – EEMJ. The *Bulletin of Polytechnic Institute of Iasi* edited its first issue in 1946; it publishes scientific and related industrial applications papers in 10 specific professional sections (four numbers/ section/ year). There are six sections ranked in the first category by CNCS. ISI ranked EEMJ journal has an impact factor of 1.435 (according to 2010 Journal Citation Report).

TUIASI owns a publishing house, *Politehnum* (<http://editura.tuiasi.ro>) and a letterpress office. *Politehnum* has the purpose of publishing treaties, textbooks, professional monographs, general informative papers and history of science, dictionaries and encyclopedias, PhD theses, courses, reference books, TUIASI conference proceedings and so on. Financed by the budget, the own letterpress office is printing the books, courses and reference books related to the educational activity.

The TUIASI infrastructure has developed following the general development of the institution, using both budgetary funds and other sources.

The IT Department is the basic entity through which the TUIASI Academic Network is managed. Following the establishment of the Computing Centre back in the '70s, the communications centre began the development of the university network in 1993. In 2011 it consisted of about 8000 computers.

The organization and development of the international relations of the university are implemented by the Vice-Rectorate for International Relations and University Image (PRIIU). In this respect, PRIIU has a double mission: supervise the international relationships towards reaching the objectives established by the Senate, to promote the image and increase the visibility of TUIASI.

II.2.3. Academically-related activities

TUIASI is a higher education institution of advanced research and education in various fields of scientific and technical knowledge. The scientific ability is proved by its top position in the classification of the Romanian universities. Assuming the status of an advanced research institution, the University develops its own scientific structures through which it valorizes the knowledge, and assures the conversion to innovative products and services.

The university mission is to transfer innovative knowledge for the benefit of society as a result of the research outcome. The research is a key objective that supports the economy based on knowledge and innovation, entrepreneurship, and sustainable development; the potential of the university in producing knowledge, transmitting, dissemination and utilization of the scientific production is highlighted through patent applications and the participation to national and international exhibits in the technical creativity field (Appendix 32).

It is worth noting the existence of the intellectual property bureau, providing specific consultancy for the members of the research community (Appendix 21). Real difficulties exist in regard to the decision of the “Intellectual Property Protection” – because of the financial impediments for protection (not only at national level, but especially at international level).

In order to increase the number of patents acquired by the industry, the University will financially support the teaching staff by paying the patent fees, so that the administrative procedures concerning registering the patents would be much easier.

The policy in the field of innovation is based on administrative structures, organised for and on the account of the research and innovation research activities. The main fields of research are defined at the level of departments / faculties. For better handling the available or attracted financial resources they are set up and developed by the Centre

of Research and Technological Transfer – POLYTECH and other Centres of Research / Innovation at the level of the departments/ faculties (Appendix 21). These centres are capable of setting research partnerships, access funds through national or international competitions, to support dissemination of the scientific production via top publications.

A large number of research contracts have been accomplished (Appendix 25) and widely disseminated at different conferences and workshops (Appendix 33). The technological transfer is performed through consultancy and engineering expertise. Following discussions between the University and the Prefecture of Iasi County, an Education and Research Committee has been formed, as part of the regional Economic and Social Development Committee. Its mission is to generate a consultative framework in order to favour the collaboration between the university and the business environment.

Several lifelong learning programs were developed in the past few years at TUIASI. This process is consistently coordinated by the Department of the teaching staff training and comprises Regional centres of flexible professional training and Education and continuous training centres. These structures adopt appropriate strategies for promoting and strengthening the university offer.

The process of lifelong learning will become important in the overall educational offer of TUIASI due to the decreased number of high school graduates. The threat of population decline and, consequently, the reduction of the number of students can be balanced by a wise policy of lifelong learning, attracting students to complete and/or update their professional training through various specialized courses. Partnership with regional authorities allow the extension of the lifelong learning offer in the counties in the geographic area of the North-Eastern Development Region of Romania. New opportunities for cooperation are materialized based on agreements and contracts with national and international companies in the field (Appendix 34).

Lifelong learning process decreases as a legal framework has not allowed the formation of post-graduate training programs. By identifying the opportunities in the labor market, the TUIASI educational offer will be diversified, taking into account the national and international needs, with special attention to the Republic of Moldova.

TUIASI has a weak point referring to the organization and functionality of student internships. Small and medium sized companies cannot provide sufficiently large enough practical training facilities, i.e. common groups of 20-25 students. In this context, institutional agreements for individual internships are signed, trying to direct the students to their residence places. To address this situation, the TUIASI is currently running projects financed from structural funds (Appendix – 24). Other good practices include a long collaboration with companies (Renault Technologie Roumanie or Continental VDO Romania) to set up master study programs.

The European project *Erasmus* is a model for the support and development of the European dimension of the university, regarding undergraduate and post-graduate studies, for putting into practice transnational companies and for the support and training of students by training programs in European companies.

The ALUMNI associations assure a better communication between the graduates and the University and provide the development of certain sponsorship actions, e.g. rewarding the students who have remarkable results, connects the students with the graduates of the university and studentships for poor students. This action has begun in 2011.

Nowadays, the university has an operational on-line platform through which the contact with the Alumni is partially done, only at the level of certain departments/ faculties. For an efficient communication with the Alumni and an enhanced visibility of the university, the institution considers the involvement of certain long-term supplementary financial resources.

II.2.4. Student support services

TUIASI offers various services to provide an adequate climate for studying and for a quality student-life, namely:

- social services – accommodation facilities, studentships, local transportation with a discount of 62,5 %, inter-district transportation with a 50% discount;
- sports services – a sports arena and weekly sports events;
- cultural services – events organized by the students for the students;
- informal education – through various trainings and seminars organized by the student associations with the support of the university.

The students benefit of accommodation possibilities in twenty-one hostels situated in the student campus *Tudor Vladimirescu*, having the capacity to accommodate over 8000 students and has exceptional endowments purchased under the project *Refurbishment and Update of Tudor Vladimirescu Campus*, a modern sports arena and a student clinic with qualified medical staff.

The dormitories are fully furnished, they have free Internet connection, eight hostels have rooms with individual bathrooms, a kitchen for each floor and laundry at the ground floor. Twelve hostels were refurbished through the program *Refurbishment and Update of Tudor Vladimirescu Campus* with a budget of 16 million Euro. Through the same program, two sports arenas were restored.

The rent costs are between 30-100 Lei/ student/ month, according to the comfort, being the smallest costs in the country.

TUIASI promotes student equality by providing certain facilities for students with special needs, with disabilities or ongoing illnesses. Almost all buildings and hostels have elevators, being equipped with handrails and platforms.

II.2.5. Funding

The legal financial framework according to the new Law of Education is indicated in paragraph II.1.1.2. Extra-budgetary resources include: national and international research grants, tuition and administrative fees, income from rental spaces, external cooperation, donations, sponsorships.

The salary spending (teaching and administrative staff) hold a significant rate in the overall structure of the University budget. It covers about 88% of the total grants received by the university through the basic funding, while the remainder of 12% is spent on utilities and other goods and services.

Tracking the evolution of the university income during 2007-2011, a significant reduction of approximately 15-20% is visible in the years 2009-2010 compared to 2008, and a slight recovery in 2011. The financing from the state budget had a rate of approximately 68% in the years 2007 and 2008, and afterwards it significantly dropped to approximately 58%. The income out of the state budget financing for scientific research and of business operators registers a significant reduction from 18,99% of total revenue in the year 2007, to 9,81% in the year 2011.

The total rate of the extra-budgetary income of the university is about 21%, mainly composed by taxes and external financing programs. Those have become an important source of revenue since 2009 (a total rate of 8% in 2009, 15% in 2010, and 22% in 2011). It is worth mentioning that the progress of these projects has been sustained by 8.840.872 RON from internal revenues and by 3.555.290 RON from grants overheads.

Out of the total budget of the university, a percentage of 2% is allocated by the governance of the university for the purpose of implementing new projects.

The university calculates its research and teaching activity costs and it is permanently monitoring their preservation within the budget limits.

Essentially, in terms of funding, the following strengths and weaknesses may be mentioned:

Strengths:

- the encouragement of good quality practice in educational and research within the university in order to attract supplementary funds provided by the ministry (supplementary financing takes into consideration the ranking of the academic programs based on academic offer and proven research excellence, favors advanced technologies, programs in foreign languages, and co-supervision of doctoral thesis;
 - increase of the institutional capacity and of the managerial efficiency
 - assume an active local and regional role by the university;
- enlarged access to European structural funds;
- a massive investment program lead to the increase of the quality of the teaching process, by purchasing new equipment, office supplies, furniture, and by providing comfort in student hostels and work spaces by investing, refurbishing, upgrading, cleaning etc.

Weaknesses:

- legal framework related to evaluation criteria and actual distribution on different domains is not always stable, clear and transparent. This would impede our University to design a proper financial setup on short-term.
- difficulty to predict the financial resources that will be provided on short and medium terms;
- instability of unit prices due to the evolution of the Leu – Euro rate of exchange.

Weaknesses can be repaired by allocating a higher percentage of PIB to the higher education system, as stated in the Constitution, and by the permanent preoccupation of the university for raising additional funds.

SECTION III. QUALITY ASSESSMENT PRACTICES

One of the main objectives of TUIASI is to implement and continuously improve the quality culture. *The quality culture involves a set of attitudes at individual and organizational level, within a normative framework, which leads to quality standards, in all university structures.* The quality culture can be distinguished when the necessary organizational structure in the quality area, the normative framework and qualified human resource are created (Appendix 35).

The organizational structure includes the University Senate, Rector, Commission for Quality Assessment and Assurance (CEAC), sub-commissions for quality assurance in faculties, departments, services, etc. (Appendix 36). The Committee is directly subordinated to the Senate and its main tasks are to coordinate the development of procedures and quality assessment activities and to elaborate an annual report documenting quality assurance in the university.

The normative framework includes the national and European legislation, the Standard Operating Procedures Manual and Methodologies (Appendix 15), the additional working instructions, procedures and guidelines. In the spirit of what quality culture represents, it was found that procedures were issued by various university entities on their own initiative, without an express request from the university management. At university level, a large number of procedures, guidelines, methodologies and instructions were developed. Currently, the university has a set of procedures for assessment and assurance of academic quality, having the characteristic of novelty at national level and having the endorsement of the academic community; this was confirmed by using them in the past five years, for annual assessments, authorization/ accreditation etc. Apart the procedures for the academic sphere, the university has developed procedures, methodologies for quality assurance within services of financial accounting, human resources, general administrative direction, library etc. Currently, in the university, there are departments with procedures for their entire activity, as it is the Library. The teaching activity has procedures for the most parts as well.

Besides the written procedures, there are also other practices such as: University good practices, operational instructions, influencing the academic and administrative work; in many cases they are founded in the spirit of regulations, procedures, and methodologies developed within the university.

Human resources for quality assessments is composed of staff who attended training courses, Masters in the domain of quality assessment and assurance. The elaboration of Reports of study programs self-assessment for temporary authorization, accreditation and periodic assessment further contributed to the evolution of qualified human resources at university level, especially during the ARACIS institutional assessment of 2009. It might be considered that by submitting 108 self-assessment reports, at that time, in every faculty or department there was a core of staff members qualified on the issue of academic quality. Moreover, because of the internal evaluation of self-assessment reports, the university created a team of auditors which analyze and assess the quality of study programs. With respect to human resources, we believe that the university has reached that critical mass of qualified staff, which could enable the maintenance and development of a quality culture.

The external assessment of the study programs is done by ARACIS. In 2009, TUIASI was also subject to the institutional assessment procedure by ARACIS, being ranked as University of *High confidence*.

TUIASI has implemented through its own procedures, many of the regulations set by the Bergen Standards and Guidelines for Quality Assurance in the European Higher Education Area document. University has its own internal assessment procedure of the study programs (Appendix 15, UTI.POB.07). This internal assessment process is coordinated by Commission for Quality Assessment and Assurance CEAC and its result are the annual reports regarding quality (see also www.calitate.tuiasi.ro).

Approval, monitoring and periodic review of study programs

TUIASI applies regulations regarding initiation, approval, monitoring and periodic review of study programs which are associated with a system for monitoring the study programs, based on information and data (Appendix 15, UTI.POB.06). All the study programs of the University are accredited (or provisionally accredited) by Government Decision 966/2011 (Appendix 6, Appendix 8). The curricula of the study programs are annually reviewed and, if necessary, modified until 10%, with the approval of the Faculty Council. Changing the study program structure with more than 10% impose the external re-assessment performed by ARACIS. To better monitor the content of the curriculum, the University aims to introduce from 2012 a unitary procedure for the periodic review of courses at Departments level. In each faculty, after the examination session the situation of the marks obtained by students and the total number of credits are evaluated. Situation of the teaching scores is discussed both in the Faculty Council and in the regular meetings of the management staff and students. These analyzes allowed, for example, the identification of some problems in understanding the courses from the first year (eg. Mathematics, Physics) due to some difficulties occurred during high school studies, they were decreased by introducing additional optional courses. Students participate directly in monitoring and assessment of the teaching quality, through their representatives in the sub-commissions for quality assurance in faculties.

Assessment of students

Student assessment procedures are carefully monitored in the University, as a function of the evaluation form (exam, colloquy, continuous assessment) a rigorous score quantification being developed (Appendix 15, UTI.POB.05). The exam score components take into consideration, to a large extent, the activity developed by student during the semester. The calculation score methodology is established by the course responsible at the beginning of each academic year, and it is mentioned in the curriculum. Students' assessment takes place in the presence of at least two persons (the course responsible and the practical activities responsible) in order to avoid possible subjective valuations. Feed-back quality of the teaching and examination activities is assured by the assessment of professors by the students, which is held annually in each Faculty (Appendix 15, UTI.POB.13).

Quality assurance of teaching staff

Since TUIASI assumed the mission of advanced research entity, the staff quality is a strategic priority of medium and long term. The quality of teaching staff is ensured both by selection and promotion procedures of staff

and by regularly monitoring of their activities. At university level there are very clear standards to apply for teaching positions (through competition), rules developed in agreement with LEN/2011. The individual staff evaluation is annually analyzed at Faculties and Departments, being based on a scoring grid that allows ranking as a function of their scientific and teaching performances. It is considered that individual assessments will generate a competitive framework within each faculty, which has as result a better quality of the staff. Within the university, individual assessments will help to identify the areas where research activity should be increased, or improved quality of teaching so that university is able to maintain the status of advanced research institutions (Appendix 15, TUIASI.POB.08, UTI.POB.12, UTI.POB.13, UTI.POB.14).

Learning resources and student support

Among the main important sources of students documentation one can mention the printed (or electronic) courses and books, published by the teaching course coordinator. In the teaching staff individual evaluation sheets there are carefully monitored and properly scored the courses editing activities, courses upgrading, etc. It is also highly appreciated the introduction in curricula of new courses, in agreement to the new trends in engineering.

A deficiency due to the chronic underfunding of the Romanian university system is the Library infrastructure. In this context, the high costs of subscriptions to professional journals, the access of students and academic staff to this form of documentation is being severely restricted. Through the ANELIS structural funded project, the Romanian university libraries benefit from access to the following databases: Science Direct, Springer Link, Wiley-Blackwell Journals, Taylor and Francis, American Institute of Physics (AIP), Thomson Web of Science, ProQuest CSA and Scopus.

The University has attempted to identify other forms of funding, currently being developed a new ANELIS PLUS project which will provide access to the following databases: Science-Direct, Springer, ISI Web of Knowledge and ProQuest Central. University will participate in this project with a funding share of 64,500 euros / year, during a period of three years.

Since 2000, TUIasi Library has allocated a fraction of 0.5% out of the university basic funding for the acquisition of Romanian and foreign scientific publications. Currently the library has 970,744 books, including 526,120 volumes of non-periodical publications, 130,103 volumes of periodicals, 309,452 patents and 5,069 special volumes, covering the information and documentation for all the study programs. For quick access to publications and a better information and documentation process, the 11 faculties of the University are assisted by seven library branches, with 8 reading rooms, 6 loan rooms, 10 repositories and 512 reading study places. The library has the adequate IT infrastructure that assures ALEPH 500 software operation, which includes new programming concepts and includes modules to manage specific activities within the library. In this way computerised specific services are provided and enable the users the possibility to view online the library list of books and other e-resources existing on the library website (<http://www.tuiasi.ro/index.php?page=1235>).

Specialized library staff consists of 30 librarians and 1 systems engineer that provide access to the publications and information services and assure training in the practice formation to use the library.

Information systems

TUIASI has a system that facilitates the collection, processing and analysis of relevant data and information to assess and ensure the institutional quality, having as result the Annual Report documenting Quality Assurance at university level (Appendix 15, UTI.POB.06, UTI.GHID.01, UTI.GHID.02). In addition to data and information regarding the status of the institutional quality, the university collects information about the quality of other universities within country and abroad, to which it is compared and on whose basis the benchmarks are established.

During the last period, the university has made efforts to set up its own system of information on graduates (employment rate after graduation, career, degree to which employers are satisfied with respect to the training of graduates, etc.). Because the Romanian universities haven't had a tradition concerning the graduate databases, collecting these information is still difficult. The large numbers of small and medium sized enterprises that are created or disappear in short periods of time are also a problem concerning the identification of potential employers and maintaining a permanent dialogue with them. There are also difficulties in terms of graduates questioning, concerning the satisfaction degree related to the level of education, teaching quality, resources and educational infrastructure of the University.

Public information

All legal information concerning the study programs, admission requirements, length of studies, fees, level of qualification obtained, employment opportunities, etc. is available on TUIASI central and faculties websites (<http://www.tuiasi.ro>). The University has a newly created position of Vice-Rector in charge with IT management since 2012.

Research activity. University has a permanent preoccupation towards the development and evaluation of scientific research, which is a component of additional funding from the budget (based on excellence and competitive grants). University preoccupation in this direction is reflected in the quality and number of scientific articles published

in ISI journals and ISI indexed conferences, which ensures the first position within the advanced research universities in Romania (in agreement with SCImago Journal & Country Rank, Normalized Impact Report- SIR World Report 2011, http://www.scimagoir.com/pdf/sir_2011_world_report_ni.pdf).

Infrastructure. In the evaluated period, the University finalized a series of investments related to both construction of new facilities (eg. the Faculty of Mechanical Engineering) and laboratories endowment with high performance equipments by using research grants and infrastructure dedicated projects (eg Interdisciplinary research platform *High Performance Multifunctional Polymeric Materials for Medicine, Pharmacy, Microelectronics; Laboratory of analysis and control of environmental factors etc.*) (Appendix 11).

SECTION IV. STRATEGIC MANAGEMENT AND CAPACITY FOR CHANGE

“When you have a hammer in your hands everything around looks like a nail” says an old English proverb, and this makes a valid statement not only for technical or scientific achievements, but also for the political or social activities. With specific reference to (higher) education, “reform” has been the magic keyword behind which a plethora of national and local authorities, politicians, NGO’s, or mass-media have lined up with enthusiasm and hope. As a consequence, during the last years we have witnessed an overwhelming (and sometimes, aggressive) pleading for “the need for change”, “new mentalities”, and “European view” on academic life, although the message carriers were not always recommended by their professional performances nor pedagogical background. As a result of a large popular and political debate, a new *National Education Law* was approved in January 2011.

An open discussion about the role of University nowadays is of utmost importance, and in fact we may identify personal views on the subject from both regular academic members and executive staff. Globalization, extended communication infrastructure, increasing technological competition, and diminishing natural resources put a significant pressure on academic entities, and call for intelligent, creative, and effective measures in order to cope with the actual and foreseen requirements of our society. A number of studies have addressed key questions regarding the organization, management, balance between education and research, or the position of the generic University within the social and economic context, and some of the conclusions are as follows:

- *leadership is crucial for both the educational and research performances of the University:* an extensive (statistical and qualitative) study conducted by Amanda Goodhall, the author of *Socrates in the Boardroom: Why Research Universities Should be Led by Top Scholars* (Princeton University Press, 2009) clearly revealed that best world universities are led by top, highly-cited academics, and not by professional managers. The main arguments supporting these findings are related to the high credibility and respect for such a leader, his/her capacity of convincing and mobilizing people, the competence in prioritizing tasks and defining high quality standards (that should be met by the university leader in the first place), and the clear message that he/she transmits to the academic community and the external environment about the main objectives of the University;
- *technical universities should focus their educational activities on originality, innovation, and intellectual property creation, instead of providing standardized technical skills to its graduates:* this is a direct consequence of the competition with highly populated countries like India and China, that are constantly providing a huge number of engineers. As such, many North-American and European companies are outsourcing their projects, looking for shorter time-to-market and financial benefits. The response of the University should envisage interdisciplinary training, teamwork building, and educating students to look for fresh approaches to practical applications by constructing appropriate (mathematical) models, and using the right tools in order to analyze, synthesize, and finally implement a working solution.

Among many important issues to be considered, we may mention the following:

- The University should not limit its role to delivering well trained graduates, nor offering the newest technologies or the most efficient solutions to practical problems raised by the industry. The academic staff should also be involved in fundamental research, in studying problems important *per se*, and even theoretically formalizing or inventing items “whose time hasn’t come yet”.
- The University should recognize the importance of life-long learning, continuing education, and the accompanying advances in e-learning technologies. The students should receive a solid education on basic (technical) principles, with a strong emphasis on interdisciplinary training.
- The University curricula should provide teamwork abilities, communication skills, foreign languages proficiency that will make the graduates efficient from the early beginning of their professional careers.
- Internationalization plays a key role nowadays; hence the University should take active actions towards attracting students from other countries, enlarging the student/teaching staff exchange programs, and increasing the number of partnerships in research programs.
- The University should also focus on ethical aspects, including conflict of interests and zero-tolerance for academic fraud and plagiarism.

Any realistic strategic plan should take into consideration a number of external constraints, including:

- proliferation of universities across Romania limits the “basin of attraction” of our University. Moreover, the low rate of high-class graduation exam (the “Baccalaureate”) passing, along with an increased tendency of well-trained pupils to study abroad, continually decreased the total number of first-year applicants;
- technical faculties are traditionally considered difficult, since they require good mathematical, chemistry, physics and programming aptitudes. Many high-school graduates would choose a humanistic/law/business career instead, further motivated by faster financial rewards;
- under-financing severely affected both the education and the research activities. The financial conditions would prevent top graduates to pursue an academic career. Moreover, low values of the doctoral scholarships (since 2011, after the disappearance of structural funded projects and the PhD supervisors’ retirement) adversely affect even the number and the quality of PhD students;
- University hasn’t completely absorbed the shock of the massive brain-drain of the 90’s. At that time a significant number of top academic staff and researchers chose to leave the faculties and go abroad, and their replacement has only partially succeeded;
- local and regional industry is still underdeveloped, despite several investments made by major multinational companies. Only recently, the finalization of a large business project is set to really improve the perspectives, especially for the IT&C industry.

According to the limitations stated above, our University should pursue the following:

- Efficient use of the human, financial, and infrastructure resources. The departments should be (re)defined in correlation with the specific domains of study, so as to ensure the priorities in education and research. Moreover, the departmental staff should be large enough to enable proper handling of both educational and research activities.
- The curricula should take into account the competences to be delivered, according to national regulations, and the actual and foreseen structure of the local and national industry. Special attention should be paid to interdisciplinary training and “soft skills” formation (teamwork, communication, project management, etc.), acquire, install, and use e-learning platforms;
- Extend the educational offer in foreign languages, at both undergraduate and Master levels;
- Enlarge cooperation with industrial partners in terms of education aspects (diploma projects, practical activities, internships, scholarships), and research activities (PhD programs, joint research projects, organization of scientific events). Establish continuing education programs;
- Improve communication within the University regarding research interests and priorities. Dissemination of good practice examples in establishing cooperation with foreign partners, and applications for European research grants;
- Re-evaluation of the research centers at national level considering priority research domains, establishment of a “critical mass” of people involved on each direction;
- The human resources strategy should focus on attracting talented people to pursue an academic career. The financial setup should encourage young people to stay, whereas a fair speed of attending higher academic degrees should be granted, once the promotion criteria are met. Special attention should also be paid to experienced researchers in order to become PhD advisors.
- The University should provide the hardware and software support for continuously monitoring the hiring status of the graduates, the research results of the staff, and the administrative activities.

According to the current state of the University, we present the following SWOT analysis, that may set a solid ground for the actions to be taken in the near future:

Strengths

- high ranking of the University and the study domains in the national classification procedure
- well established internal practices for quality assessment
- the adoption of the ECTS system
- high number of mobility and cooperation agreements with other European universities
- the quality of the teaching and research staff
- the existence of a significant number of recognized research centers
- the organization of important scientific events with international relevance
- access to on-line high quality scientific literature
- rich student and teaching staff international exchange programs
- the most modern campus in Romania for more that 8600 students
- good experience in technologic transfer to industrial companies
- projects for continuing education and academic staff development have been organized
- a significant number of PhD programs have been funded through European structural funded projects
- the large amount of financing from national and international research grants
- high professional insertion ratio: more than 80% of our graduates are hired in the first 6 months after graduation.

Weaknesses

- limited offer for foreign language programs (English or French)
- reduced number of significant ISI publications in some domains
- limited number of journals with international relevance edited by the University
- research activities dispersed on (too) many directions, hence the difficulty of providing a “critical mass” of researchers involved in the same topics
- some domains of study are covered by distinct faculties, hence difficulties in fair performance evaluation and financing
- limited number of internationally funded research programs
- reduced information on the web sites of the faculties, poor design and content management, no English versions
- limited use of modern e-learning platforms and tools
- small number of international granted patents
- limited across-border cooperation with universities from the Republic of Moldova
- limited experience in creating spin-offs and start-ups
- the decrease of the total number of applicants for the first year of study

Opportunities

- many companies provide diploma projects, internships, scholarships
- the recent development projects attract many companies (including multinationals), that establish design centers and production facilities, as well as services in Iasi, (e.g. Continental, Delphi, Infineon, Palas, etc). All the companies are interested in employing TUIASI graduates
- the establishment in the near future of the University Data Center to enable the integrated system for education, research, administrative information management, e-learning platforms
- the increasing need for continuing education from the industry
- the regional level project developments that enable clusters and partnerships between universities, companies, local authorities, and research institutes
- trans-border co-operation frameworks (e.g. Romania, Moldova, Ukraine, Bulgaria) and thematic regional initiatives (eg INTERREG)
- the high number of students involved in international exchange programs, mainly under Erasmus framework

Threats

- legislation instability, lack of medium/ long term strategic plans for education at national level
- the acute under financing affecting both Bachelor and Master programs
- the diminishing number of national research grants
- the inadequate promotion criteria to higher academic positions
- the relative high age average of the staff
- small number of PhD advisors for some domains
- the decreasing number of PhD students due to under financing
- the proliferation of low quality higher education institutions

SECTION V. CONCLUSIONS

The present report is the outcome of the self-evaluation process that has been accomplished at TUIASI, considering the institution strategic and quality management activities while also including the data provided by the university as input to the classification exercise and other relevant national evaluations. The major changes within the Romanian society and especially in the field of higher education after the implementation of the Bologna process have been reflected by the adaptation of the strategy for development of the university, with focus on the educational and research area, the implementation of quality assessment framework and procedures, students learning and living conditions, efficiency and competitiveness, co-operation and visibility at national and international level, development of human resources and infrastructure. Even if the strategic plans are elaborated each 4 years, the operational plans that are conceived each year by all the management structures, consider the necessary revisions of the strategic directions, in relation to the legislation evolution, different opportunities that might appear in the national or regional environment.

The major **strengths** of TUIASI refer to its performances and classification as an **advanced research and education** university and the **A** ranking of its study domains, due to the quality of the teaching and research staff, the well established internal practices for quality assessment, the existence of a significant number of recognized research centers (supporting also the doctoral Schools development), with relevant research results at international and national level and good experience in technologic transfer to industrial companies. The adoption of the ECTS system, as well as the high number of student and teaching staff exchanges and cooperation agreements (including PhD co-supervision) with other European universities, contributed to an increased visibility of the university and also to the

organization of important scientific events with international relevance. After the European Union integration, the access to structural funds for human resources development-POSDRU, regional development, or research collaboration-FP7 provided important opportunities developed at institutional or faculties level. Thus, project proposals for doctoral and post-doctoral fellowships, practical periods development, continuing education and academic staff development, or the modernization of the *Tudor Vladimirescu* student campus were developed (more than 50 million Euros were attracted in the last 4 years, although these projects were not explicitly part of the strategic plan of 2008). The access to on-line high quality scientific literature and the constant participation in national and international research grants competitions (even if for the last 3 years there has been a constant decrease of national funds allocated to research), confirm the top results in research that have been accomplished by some groups in TUIASI (results that have been registered through the quality indicators of the CNCS evaluations).

The major **weaknesses** of TUIASI refer to the decrease of the total number of applicants for the first year of study (lack of interest for the engineering studies combined with a limited marketing and offer for foreign language programs). Even though research is one of the strong points of the university, its international dimensions for some domains/groups are still limited (reduced number of significant ISI publications or participation in internationally funded research projects, limited number of journals edited by the University with international relevance, small number of international granted patents, limited cross-border cooperation with universities from the Republic of Moldova). Other problems refer to the informatization activities (reduced information on the web sites of the faculties, poor design and content management, limited use of English versions, limited use of modern e-learning platforms and tools). Other issues related to the dispersion of domains of study at the level of more than one faculty and the relative superposition of some directions of research induce problems of fair performance evaluation and financing.

The integrated approach at all educational levels and advanced research for the majority of the domains (BSc, MSc, PhD and post-doc) provides an efficient and effective use of the existent and developing resources (human, infrastructure, documentation, partnerships); further developments, considering these issues can bring significant changes in the university, faculties, departments, research centers and Doctoral Schools evolution.

Given the analysis above and considering its tradition, mission, and values, TUIASI should conserve its position as a top (class "A") advanced research and education university among Romanian higher education institutions. The continuous improvement of quality and efficiency for all the academic, research and management processes within TUIASI is important for the conservation of its position as a top advanced research and education university among Romanian higher education institutions.

However, the developments towards a **sustainable University** in terms of educational offer, research outcome, staff selection/ promotion, and financial flow, should also consider an **entrepreneurial view** based on quality, competitiveness, efficiency and visibility.

Thus, any action plan considering the remediation of weaknesses and strategic development of the institution should take into account the following directions:

Education

- flexibility of the curricula in order to cope with the actual needs of the local and national industry
- enlarge and diversify cooperation between the University and industrial companies in terms of curricular support (especially for applications), diploma projects, internships, and practical activities. Define and organize courses oriented towards continuing education.
- encourage the introduction of optional courses to be taught by people from industry. Seek logistic support for establishing/improving new/existing laboratories in terms of hardware and software infrastructure.
- extend the offer for English programs
- improve cooperation with local and regional high-schools through periodic visits, science and technology presentations, co-organization of competitions
- establish the Data Center of the university. Install, maintain, and use e-learning platforms.

Research

- the Data Center should allow gathering, organizing, and reporting up-to-date statistics on research activity outcome of the university staff
- the research centers and associated staff should be defined according to (a limited number of) distinct domains of interest, avoiding the dispersion of material and human resources.
- our University should consider establishing a number of publications to be promoted as ISI journals
- extend cooperation with industrial partners on research projects of mutual interest. Multiply PhD programs rooted in industrial applications.
- increase the number of PhD advisors, and the number of theses under combined Romanian and foreign supervision
- increase the number of patent applications
- encourage the creation of start-ups and spin-offs originating from innovative projects developed by the university research staff

- encourage and financially reward proven research excellence
- provide on-line access to high-quality scientific literature
- maintain (and possibly increase) the number of significant international scientific events organized by the university
- encourage affiliation to international organizations (*e.g.*, IEEE)
- increase the number of distinguished lectureships provided by foreign top scholars. Organize research workshops and summer-schools.

Quality management

- internal quality evaluation of the academic programs according to reference standards and international good practices
- continuously improve, update, and extend the Procedure Manual
- periodically monitor quality assessment using external evaluation bodies
- collect, analyze, and report student feedback on quality of education through specific evaluation procedures
- improve procedures for obtaining financial bonuses by the teaching staff (“gradations of merit”)
- update internal criteria for staff promotion according to national regulations and relevant research results.
- maintain a high standard for staff enrollment and promotion
- professionalization of the educational marketing and academic image promotion
- decision transparency and dissemination of information to the academic staff
- financial discipline reflecting prudential actions in money spending. Provide resources for infrastructure development and European projects co-financing.

Service to society

- maintain a high ethical standard, without compromises related to any kind of fraud
- design, implement, and maintain high-quality, user-friendly, content-rich websites at university and departmental levels. Give open access to accurate information of public interest, including technical and financial aspects related to education and research activities.
- disseminate educational and scientific information by means of public conferences, mass-media presence, on-sight visits, website content
- offer professional support to local administration for public projects and industrial partnerships.

Iasi, May 26th, 2012

RECTOR,

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