

# "Connecting Greek Higher Education and Industry: The Case of Liaison Office SEC PUAS & its mutation to Liaison & Technology Transfer Office; the present & the future".

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## **Abstract:**

Cooperation between universities and industry needs to be intensified by gearing it more effectively towards innovation, new business start-ups and, more generally, the transfer and dissemination of knowledge. The Institution of Liaison Offices in Europe has aged just 30 years while in Canada and the US, strong links between research institutions and industry have always existed and as a result, the interface with production has been accomplished a lot of years ago. The number of LTTO in American universities was increased especially after the implementation of the law, which allowed universities and general public sector laboratories to exploit discoveries and lead to funding partnerships from industry. In Greece, the Career / Liaison Offices preceded Liaison and Technology Transfer Offices which however do not operate in all institutions. This paper examines the current situation in Greece concerning the good practices of cooperation between HEI & Industry. For this purpose, summarized, in principle, the structures, actions implemented in Greek higher education today, will be presented. One of the specific objectives within the NSRF is enhancing the quality of higher education through strengthening the human research potential and especially through the operation of Technology Transfer Offices/Liaison Offices. The purpose is to support research and innovation as well as the networking of universities with the business world and research institutions. Last but not least, this paper also examines the Liaison Office which operates since 1993 in our University, and is going to be mutated to "Liaison and Technology Transfer Office": the structure often required to bridge the gap that is often found between research and production. The support for research and innovation contributes to enhance the quality and effectiveness of higher education in general and to improve the competitiveness of the Greek economy.

**KEY WORDS:** *Education System, Industry, Cooperation, Universities, Liaison and Technology Transfer Office.*

## **1. INTRODUCTION**

The Institution of Liaison Offices in Europe has aged just 30 years while in Canada and the US, strong links between research institutions and industry have always existed and as a result, the interface with production has been accomplished a lot of years ago. The number of LTTO in American universities was increased especially after the implementation of the law, which allowed universities and general public sector laboratories to exploit discoveries and lead to funding partnerships from industry [3]. Liaison Offices/Career Offices are a relatively new institution for Greek Higher Education, as they did for the first time appeared in Universities & Technological Education Institutes of the country in the early 1990s, under relevant financing from the A' CSF. The continuation of funding through B' and C' CSF allowed the creation of Liaison Offices/Career Offices in almost all Institutions of Higher Education, which, through a wide range of activities have been developed, aimed at supporting the academic community, particularly students and alumni in their transition efforts from study to professional life-from the University to the labor market-. Today, the existing services offered by the Liaison & Career Offices appeal to a wide audience, which extends from academic community (students, postgraduate students, alumni, faculty members, Researchers etc) to the labor market (enterprises, chambers, employers' organizations, etc.) and the wider community ( students, parents, School Vocational Guidance counselors from area Secondary Education etc.). Within the project Tempus IV-6TH "UNITE PROJECT T.E.I. OF PIRAEUS" the scientific team of the Liaison Office conducted a study concerning the good practices existing in Europe for the connection between education and industry. It analyzed specifically the patterns in Greece, presented the higher education system in Greece, the Universities' structures and the services offered as tools to attain the scope and their effective role. Original empirical data was collected through an electronic survey concerning the Greek Public Higher Education Institutes. The results yielded through analysis focus on these directions: a) the analysis of the Higher Education Institutes in figures of students, staff & funding b) the detection of the existing structures which aim at the connection of Higher Education & Industry. Connection of HEI & I, includes numerous parameters, which define and characterize it. The survey focused to the surface investigation analysis of the main variables and the factors affecting it, especially in Greece. As already mentioned the common methodology, that has been developed, gives the possibility to conduct comparative results per institute. For the realization of the research the most suitable method of primary data collection was considered the poll with the use of a short and easy to understand, structured questionnaire. The questionnaire used consists of closed, pre-coded questions and is divided in three major parts: 1) students, staff & funding issues (6 questions); 2) structure issues (14 questions); and 3) services issues (8 questions).

## **2. COOPERATION BETWEEN UNIVERSITY & INDUSTRY**

Observing university industry cooperation models is reserved to the following section of the report. The next section reports the Greek model of cooperation between universities and industry especially in a EU (projects) context. In this case the model gives information how to improve cooperation possibilities in a rapid developing economy and with an impetus from the EU. Let's not forget the four strategic objectives that EU focuses through operational programmes. The cooperation with the industry creates a more complex environment with more parameters that makes more complex the synergetic effects and synergy processes. An industry in a globalised economy depends critically on innovation and its ability to increase productivity through process innovation. Innovation itself depends on the creation, application and diffusion of new knowledge. Since an advanced economy can only compete by creating new product and technology, the creation and diffusion of the knowledge on which this is based has become a factor of utmost importance. A significant part of the knowledge is produced in the academic research sector. New knowledge and ideas, generated "for the sake of the art", i.e. remaining separated from innovation, are economically worthless. In a globalised economy, when the governmental funding has become chronically insufficient,

Universities cannot afford to ignore this aspect and remain separate from industry. Therefore a fundamental changed attitude is Society needed, as well as new schemes of cooperation, which should be attractive for the industries. The production of new knowledge has therefore to be integrated into the mainstream of economical resources. This requires a structural connection between the universities and economic systems of society. The entrepreneurial attitude is seen as one of the possible solutions for the university to cope with the ever increased complexity of the economic mechanisms. Various success stories from Asian countries and USA could be evocated to illustrate the theory: the industrial platform model (very successful in Taiwan for example), the entrepreneurial model of Stanford (Silicon Valley) and MIT, where the application of knowledge is an essential part of the institutional mission and is very carefully assessed and explicitly encouraged etc [7]. These success stories are examples of technology transfer by using the university as fertile field for industrial platforms creation. Partnerships between the University and Industry sectors, either at national or European level, were given policy priority in the E.E.C. since more than 3 decades. The target was to liaise the Universities and their courses to the socioeconomic needs, the regional development strategies and last but not least to the industry. The University potential in collaboration with industry staff is expected to contribute to regional development and high Quality Education and Training, through various innovative efforts and initiatives, planned by several partnerships. In the relation between Universities and Industry in Greece cooperation is a key issue. This is done in different ways: academic infrastructures, academic programs, common research projects, internships, seminars etc. With the use of EU funds, our country managed to raise the knowledge bar to levels competing the most advanced countries in the world. Focusing on Higher Education, actions were funded, whose results are reflected in various ways such as research & innovation promotion, well- equipped libraries, operation of new departments, upgraded undergraduate and postgraduate studies. However, since the requirements in knowledge grow by leaps and bounds and we certainly should harmonize with the rhythms of the season, the continuous support of the Higher Education -and the cooperation with the market & the industry- becomes necessary with the ultimate challenge of achieving the specified objectives in order to prove to the Community co-financing, the value of investment & co-financing in the Greek society [1].

## *2.1 GOOD PRACTICES OF COOPERATION BETWEEN HEI & INDUSTRY - GREECE CASE STUDY*

There are structures that aim to support the cooperation between HEI & Industry and stress through publicity actions the good practices. One of the objectives is to reassess the concept of entrepreneurship which must gain a friendlier content for its stakeholders. This primarily means, changing mentalities that incumbent associate career, first of all, with the State and face the market, the industry and the profession as a source of risk and uncertainty rather as a starting point for personal fulfillment and offer opportunities. **Liaison & Technology Transfer Offices:** The purpose of these Offices is to support the members of the University community and the creation of appropriate partnerships for further development of innovative research results. They usually offer the following services: Continuous recording of interesting workshops and opportunities for participation in programs, System targeted information on interesting workshops available funding, but requests for cooperation from other agencies, based on their interests and abilities, Counseling and support for participation in proposals, Assistance in finding suitable partners, Finding partners, Counseling in signing the agreements on intellectual property and cooperation agreements in the context of equity - funded programs, Contact with local businesses who are interested in cooperation with the

University, Creating networks with other Liaison Offices in Greece and abroad, Establishing relationships with regions, municipalities and other bodies involved in the development of the region, Establishing relationships with our nearby universities and colleges, Organisation “Researchers’ Days, “Local entrepreneurs’ Days”, Information, education staff on issues related to the better functioning of the office, Search for funding to enhance the function of that office, Contact with the local press, Production of information material, Maintain updated website, Continuous recording of useable research laboratories results to find suitable mode of recovery and appropriate method of financing, Providing legal advice and assistance for the registration of a research and cooperation agreements: Copyright, Trademark, Draft , Patents, Confidentiality Agreement for preliminary discussion exploitation investigation, Technology transfer agreements or technology to third parties, License Agreement, Cooperation Agreements, Surveys, Support in applying for patent, Investigate the existence of another patent, Decision on Greek or other patent, Assisting in the preparation of the patent application, Applying patent, Find programs or other funding agencies for exploitation of research results, Financing of current programs, Funding from specific industrial or other entities) that are in contact and may be interested, Funding from Venture Capital, Funding bodies warmers, Find partners through participation in targeted Investment Forums [2].

**Technology Parks:** According to the International Association of Technology Parks (International Association of Science Parks, IASP), Science Technology Park is an initiative that has strong links with Universities and Research Institutes, is designed to encourage the creation and growth of knowledge-intensive businesses housed on site, supports the transfer of technology, entrepreneurship and local development and usually run by a small team of experts or a university etc. The first STEP created in Greece in the early 90s, on the initiative of the Foundation Technology Hellas (FORTH) was the Science and Technology Park of Crete (Heraklion), the Patras Science Park and Thessaloniki Technology Park Shortly afterwards "Leucippus" STEP was created from the NCSR "Demokritos" in Athens, the Lavrion Cultural Technology Park from NTUA, the Thessaly Technology Park in Volos and Ioannina Science and Technology Park. Recently, the program "ELEFTHO" (OP Competitiveness) created private business incubator, and there are ongoing private initiatives to create technology parks in Attica and Thessaloniki. All existing Greek STEP were created with government initiative in collaboration with research and academic institutions and the General Secretariat of Research & Technology. [3].

**Career Offices:** In Greece, the Career / Liaison Offices preceded Liaison and Technology Transfer Offices which however do not operate in all institutions. Have been operating the last two decades aiming to offer a source of up to date and accurate advice and information on a range of educational, career guidance and counselling issues, a meeting point between education and the labour market, an opportunity to get in contact with public sector bodies, in general, a bidirectional node between the Academic Society and the production sector to create partnerships, a contact point between Universities and other educational institutes throughout Greece and abroad. More specifically, the most important services offered by the majority of Career Offices of the Universities of the country are Counseling Services, Services in connection with the labor market, Services related to Postgraduate Studies and Scholarships, Services to faculty members and departments of their institutions, Services to the Secondary Education, Events – Events, Entrepreneurship Services etc [2].

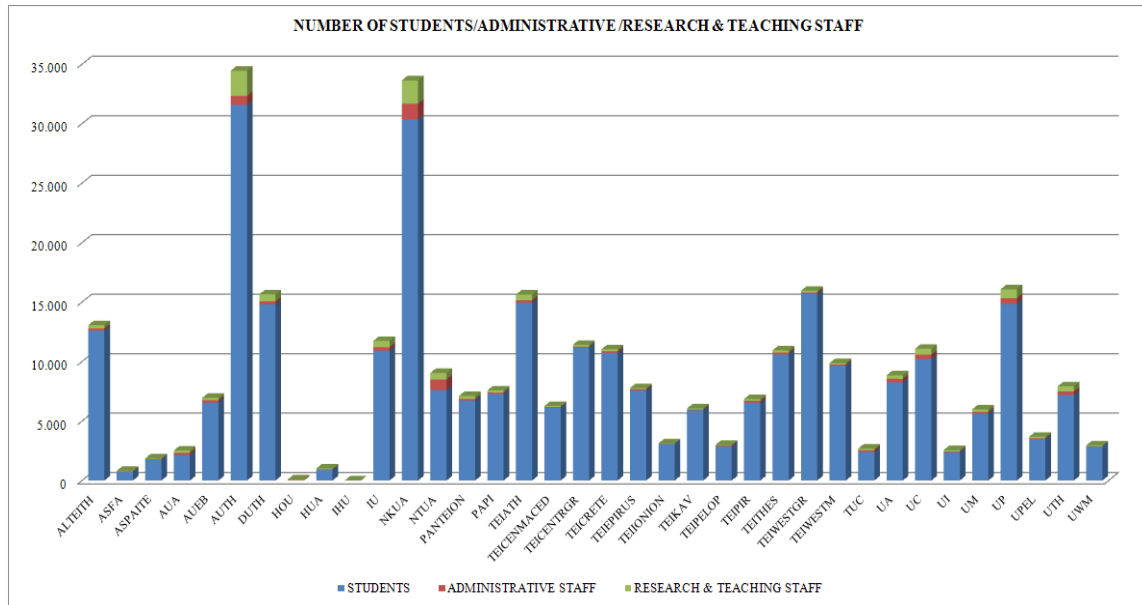
**Structures of Employment and Career:** With the continuation of the funding in the frames of NSRF (National Strategic Reference Framework) and the operational programme for education and life -long learning, co-financed by Greece and European Union, a new structure is developed the Structure of Employment and Career which is established and is active since 2008 in Higher Education and is responsible for organizing, supervising and coordinating all individual structures / programs relating to the connection of higher education to the Labour Market and Industry. Career Offices, Practical Training Offices, Innovation & Entrepreneurship Units, Counselling and Psychological Support Centres are separate parts of Structures of Employment and Career (S.E.C.) [2].

**Practical Training Offices:** Practice is an important part of the Higher Education regarding the contact between students and the Labour Market. It is a way of linking theory with practice. The actual application of knowledge in labor market can be reached in the

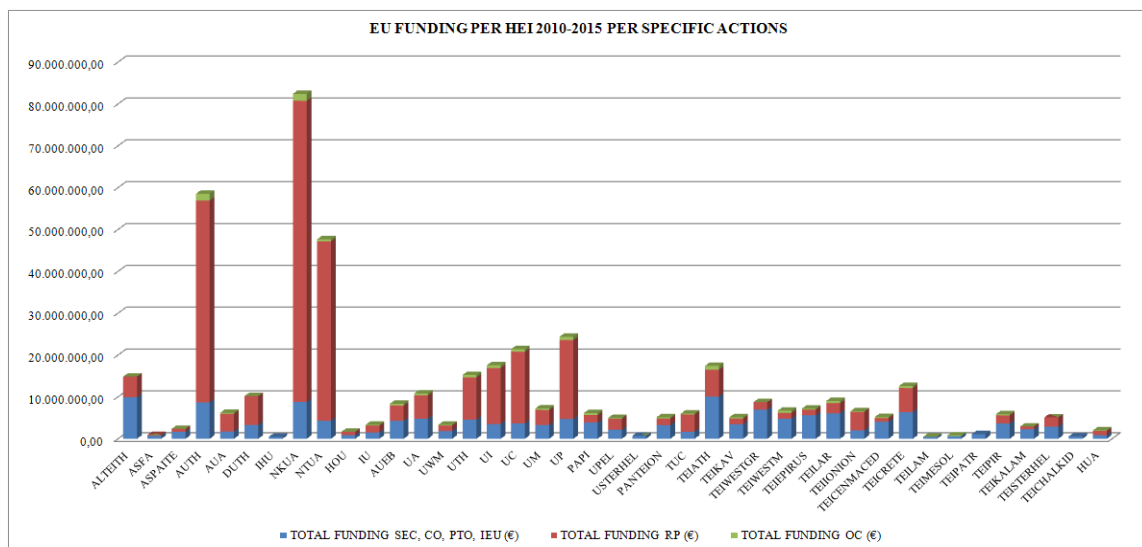
development of entrepreneur-graduates and creating new jobs. Also, the acquisition of such experiences can help in the proper orientation of a student in many cases. The Practice aims to achieve two-way feedback between Higher Education and the workplace. The intervention sought the essential connection between education and production to such an extent that the practical training is not only a request from Institutions to Labour Market but also from Labour Market to the institutions. It contributes to achieve bidirectional communication between the Higher Education and the Labour Market, Industry [2]. **Innovation & Entrepreneurship Units:** All programs include activities such as: Introduction of entrepreneurship courses, Production of educational material for educational purposes, Visits to businesses and other organizations associated with the object of study of the students, Seminars for entrepreneurs and business executives, virtual enterprises and / or developing simulation exercises and website development both for information and for distribution of educational material, Development of case studies referring to specific existing companies or specific business issues, Development of business ideas and business plans, Prizes of Entrepreneurship, Creation of Figures mentoring within the contact between students & business executives and organizations, Networking, Activities for the promotion and publicity of the program as conferences, workshops and display production and diffusion of printed promotional material [1]. **Vocational Training Centres-Technological Research Centres-Institutes for Lifelong Education-Research programmes (Heraclitus, Thales and Archimedes etc):** All these structures or programs play an important role in the HEI-I synergy and reinforce their cooperation through different kind of actions (seminars, creating innovation, targeted workshops and research etc.) [1]. **Entrepreneurship services:** Programs to encourage entrepreneurial activities, innovative applications and elective courses, Organization of annual National Competitions for development of innovative and pioneering business plans, Workshops and round tables for transmission of specialized knowledge and in-depth discussions with people who have experience in business, Seminars on acquaintance with the experiences entrepreneurs, Library to study the theoretical part, Case studies for acquaintance with the history of real business, Simulated exercises for immediate understanding and addressing individual problems, Virtual simulation companies for the understanding of the overall ups, Visits to enterprises ( and if possible practice ) for experiential understanding of business operation, Edit business ideas ( possibly innovative ) to exercise to capture opportunities for new products and services, Prepare business plans of learners with approach to actual conditions, Figures mentoring for the transfer of experience of business, Counseling and guidance to better understand the design of business activity, Participation in business innovation contests and competitions for gaining experience etc [1]. **European Programmes and International Relations Offices:** contribute in their own way through special programmes or actions to the Higher Education and Industry cooperation emphasizing in the European dimension (Erasmus, Erasmus plus for young entrepreneurs, Leonardo, etc). Last but not least, we can't doubt the supporting role that some other structures, programs such as **Mentoring programs, Alumni Associations, Horizontal Action bodies** play [1].

### 3. GREEK HIGHER EDUCATION INSTITUTES IN FIGURES

Higher education in Greece consists of two parallel sectors: the University sector (Universities, Polytechnics, Fine Arts Schools) and the Technological sector (Technological Education Institutions and the School of Pedagogic and Technological Education). The Greek higher education compared to higher education in other countries shows significant peculiarities concerning the relationship between the number of students, research & teaching staff, administrative staff and the range of EU funding for specific actions[1].



**Figure 1: Number of Students/ Administrative/ Teaching & Research staff per Greek Higher Education Institute**



**Figure 2: Indicative EU funding in per Greek Higher Education Institute**

Fortunately in all HEI (36 after Athena Sceme) there is a Career Office, a Structure of Employment and Career, a European Programmes and International Relations Office meaning there is full support to students/graduates for Internships or sandwich courses, Employment Issues and last but not least for Erasmus programmes. Moreover, there is a Practical Training Office in all HEI except for two. There is an Innovation & Entrepreneurship Unit and Research Programs (Thales, Archimedes, Heraclitus etc) in all HEI except for two one, which also leads to the fact that there is almost full support to students/graduates for Practical Training & Entrepreneurship issues on one hand and there is intensification of research on the other hand. Vocational Centers (58,3%) and Institutes for Lifelong Education (61,1%) play also a secondary but strategic role when it comes to linking the Higher Education & Industry. A critical issue concerning the connection of HEI & I is the evaluation of the technology/research, the melioration, the perfection, the transition to an exploitable form and last but not least the creation of a spinoff. However, there are only 9 Liaison Offices (2 of them inactive) and Technology Transfer Offices almost the 25% of the HEI. As a result only

the 27,8% of the HEI gives support to students/graduates for Incubators as well as for Spin-off businesses through well organized structures mentioned above-such as LO & TTO-while on the other hand a 36.1% of the HEI gives support to students/graduates for Entrepreneur assistance programmes through a variety of structures. Last but not least, in comparison with European HEIs, only 7 (19,4%) of the Greek HEIs have organized and run Technology Parks or are involved along with other institutes in a STEP [3].

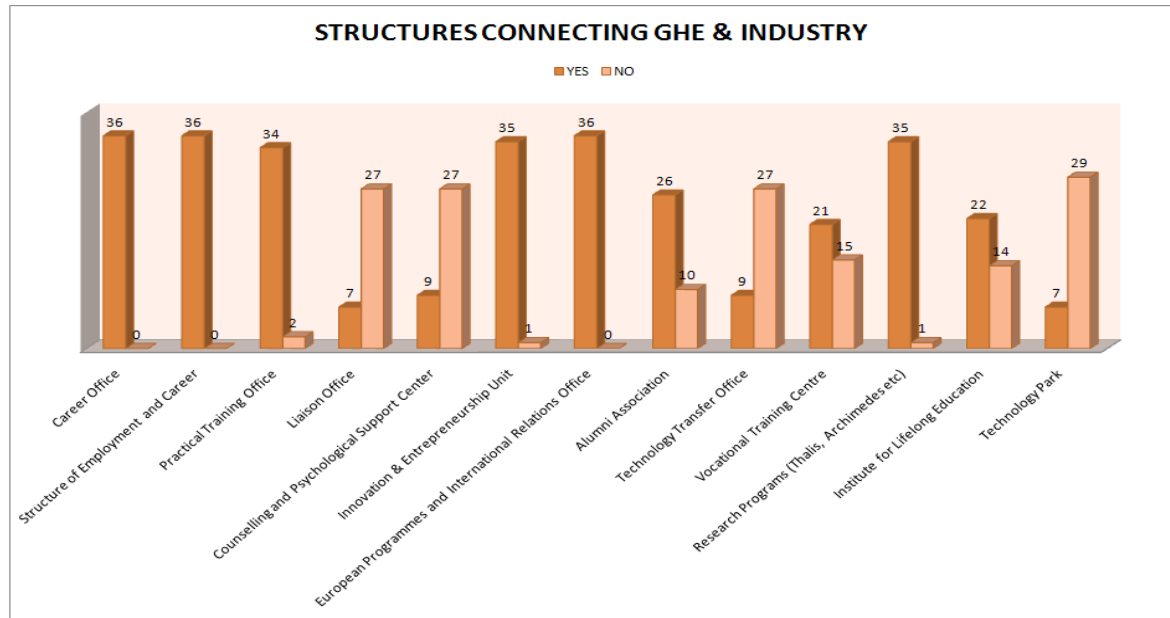


Figure 3: Structures Connecting GHE & Industry

#### 4. TECHNOLOGY TRANSFER

University possesses **Intellectual/Human Capital of University (ICU)**. The carriers of I/HCU are professors, students and staff of the University. ICU looks like something immaterial/intangible. Nevertheless under the definite conditions ICU can produce new technologies that can be transferred as it is shown on the following Figure [4]. On Figure 4 we present ICU as a cybernetic “black box” and used the following terms:

- Environment: social surroundings, nature, university lab equipment, and so on;
- Input: funds, information, energy, influence of social surroundings and so on;
- Output: new scientific ideas and results presented in scientific papers, new technologies, ideas with commercial interests, patents, sold licenses, new technology enterprises grown in incubator. If ICU is not managed it is driven by Environment and as a rule the output is not effective. Figure 5 shows the case when ICU is driven (at least partly) by Managing System (MS). MS can: 1. Monitor input (1.2), output (3.2) and the state of the ICU (2.3). 2. Organize control/influence/effect/impact (1.1, 2.1, 3.1) on the Input, ICU and Output and last but not least solve some goals, for example optimize/maximize TTP. In these terms our goal is how to make 1,2,3 that TTP is maximized and grow up [4].

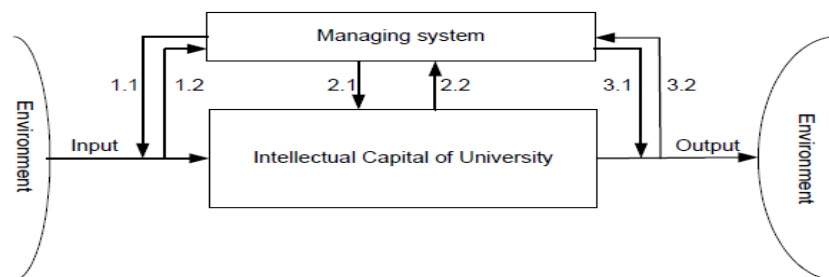
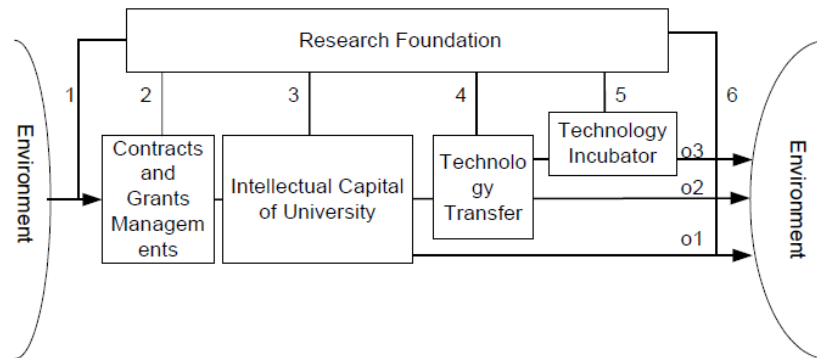


Figure 4: Intellectual Capital of the University (driven by Managing System) [4]

The system analysis shows that a University Research Office contains not only Managing Subsystem but the components that complicate the whole system as it is shown below.



**Figure 5: Model of the Technology Transfer System [4]**

Additional components are:

- **Research Foundation** is a private, nonprofit educational corporation whose primary responsibility is the administration of externally funded contracts and grants for and on behalf of the University.
- **Contracts and Grants Managements** subsystem serves as a catalyst for economic development by creating partnerships with business and industry to further research. This subsystem receives and encourages new technology disclosures, reviews all new disclosures for technical and administrative completeness, and determines sponsor's, claim inventor's intellectual property rights.
- **Technology Transfer** is to identify and protect University-developed intellectual property and license inventions for public use. Commercializing technologies that result from State University research can lead to the development of new industries and jobs for the public benefit.
- **Technology Incubator** is a University-driven community partnership providing early stage technology companies with the enabling tools, training and infrastructure to create financially stable high growth enterprises.
- **Output o1.** Results of basic research, applied research and other that are not undergoing commercialization procedure in a moment.
- **Output o2.** Patents applications and license agreements.
- **Output o3.** Early stage technology companies, new jobs opportunities.

**How does it work?** The whole Technology Transfer Process from input to output is the movement of novel inventions, discoveries, processes, techniques, devices, and substances developed at University facilities to private organizations to be developed for commercial use.

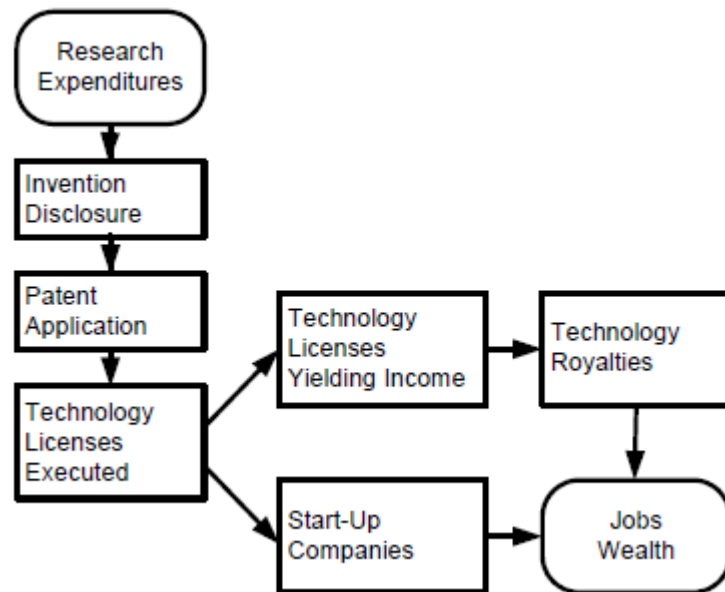
**INPUT** is to create partnerships with industry to further research and commercialize University developed technologies, to identify and protect University-developed intellectual property and serve as a catalyst for economic development by creating partnerships with business and industry to further research and license inventions for public use. **OUTPUT** is Commercializing technologies that result from State University research can lead to the development of new industries and jobs for the public benefit. **TECHNOLOGY TRANSFER** Identifies and protects intellectual property, helps faculty market their inventions. Technology Transfer is a “contact/touch” sport and the main goal of the TTO is to build a team.

- faculty (inventors) bring the science and technical expertise.
- TTO legal teams bring their knowledge of the patent process and other legal issues.
- Industry partners lend their expertise in the areas of commercialization and marketing.

**How does the inventor benefit?** Inventors receive special recognition for submitting an invention disclosure and for being awarded a patent. Inventor has to submit his idea to the technology transfer office for evaluation. The TTO conducts a search for similar patents and



prepare a Market Opportunity Analysis (MOA) to determine its commercial value and what companies may be interested. Based on the MOA and the industry contact, the TTO will apply for a patent [4]. The figure 6 shows the process in graphical form.



**Figure 6: Technology transfer process from investment to jobs and wealth [4]**

## 5. LIAISON OFFICE PIRAEUS UNIVERSITY OF APPLIED SCIENCES

Almost the same period, simultaneously with the Career Offices, the Liaison Offices initiated to operate under the same funding source but under the Ministry of Growth-not the Ministry of Education. The purpose of the Liaison Office is to support the members of the University community and to help create the appropriate partnerships for further development of innovative research results. The Liaison Office of T.E.I. of Piraeus was set up as part of the Institute's efforts to provide support where needed and to reach out to a greater number of contacts, thereby allowing the T.E.I. to become a permanent link between the educational community and the forces of production. In 1993, a Career Office was established in TEI Piraeus. The office came into operation during the period covered by the 2<sup>nd</sup> Community Support Framework (Hellenic Ministry of National Education and Religious Affairs - Operational Programme for Education and Initial Vocational Training "O.P. Education"). In 1997 it was incorporated into the 2<sup>nd</sup> C.S.F., renamed to Liaison Office and started participating in the Horizontal Action of Greek T.E.I.'s Liaison Offices. In 2001 it was incorporated into the 3<sup>rd</sup> C.S.F. & in the formal organizational structure of T.E.I. In 2010, was the initiation of the operation of S.E.C. (Structure of Employment and Career). From 1993 till 2014 LO completed 21 years of successful operation with total funding 1.683.572,81€ [2]. Liaison Office is usually organized into two units: The Unit of Public Relations and Promotional partnerships in research and the Unit of Research Results Development & Exploitation. The Unit of Public Relations and Promotional Partnerships aims to intensify the participation of research groups of the University proposals according to the interests of researchers and focuses on finding suitable partnerships and appropriate funding sources for the development of research activity of researchers. Also through the actions of this Unit, the function of the Liaison Office is well known in both the academic community and the business world, while it also concerns for renewing the skills of the staff and finding funding for the operation of that Office. The Unit of Research Results Development & Exploitation aims at providing the necessary assistance to researchers to develop & exploit their research results.

### 5.1 LIAISON & TECHNOLOGY TRANSFER OFFICE PUAS

The "Liaison and Technology Transfer Office Piraeus University of Applied Sciences ", will be the mutation of the Liaison Office and will continue to operate in order to be: A source of up to date and accurate advice and information on a range of educational, career guidance and counseling issues, A meeting point between University and the labour market, An opportunity to get in contact with public sector bodies, in general, A bidirectional node between the Academic Society and the production sector to create partnerships, A contact point between Piraeus University of Applied Sciences and other educational institutes throughout Greece and abroad. Simultaneously the following will be pursued: Training of researchers in technology transfer issues, Support in finding finance, Evaluation of commercial potential of technology, Counseling for allocating rights over research results, Support to safeguard industrial property, Collection of economic and technological intelligence on competition, Create synoptic and a complete dossier for technology promotion, Notification of technology to prospective business partners, Participation or representation of researchers in Technology Transfer Seminars, Organization of business missions abroad, Tour booth at trade - technological expositions, Providing confidentiality contracts standards, Presentation of technology on the website and electronic thematic publications. Below you can see the new Organizational chart of LTTO as well as the Research Results Development & Exploitation Unit organization. Some of the ambitious innovations we hope to succeed will be Virtual Liaison and Technology Transfer Office, Innovation and technology transfer enterprises needs study, Creation of Research Maritime Technology Park in Piraeus, etc.

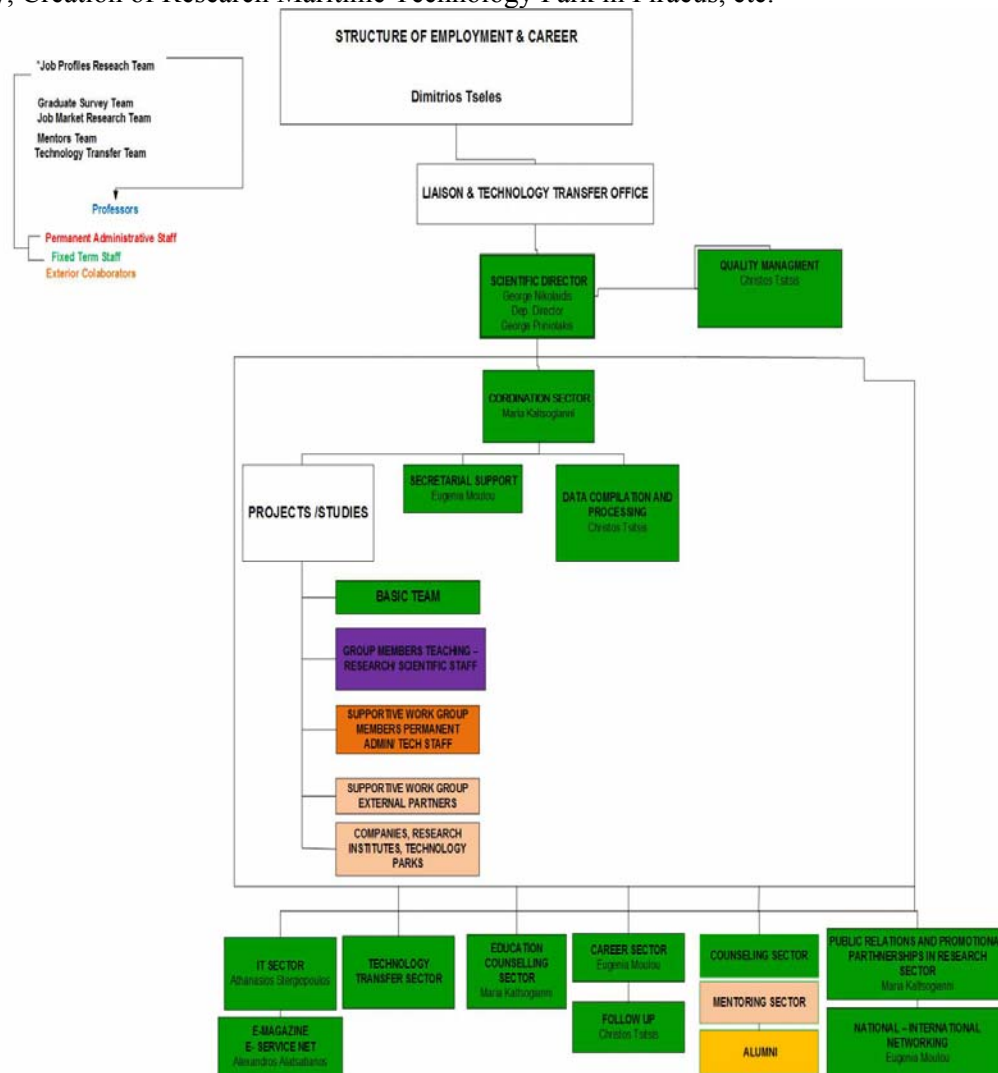
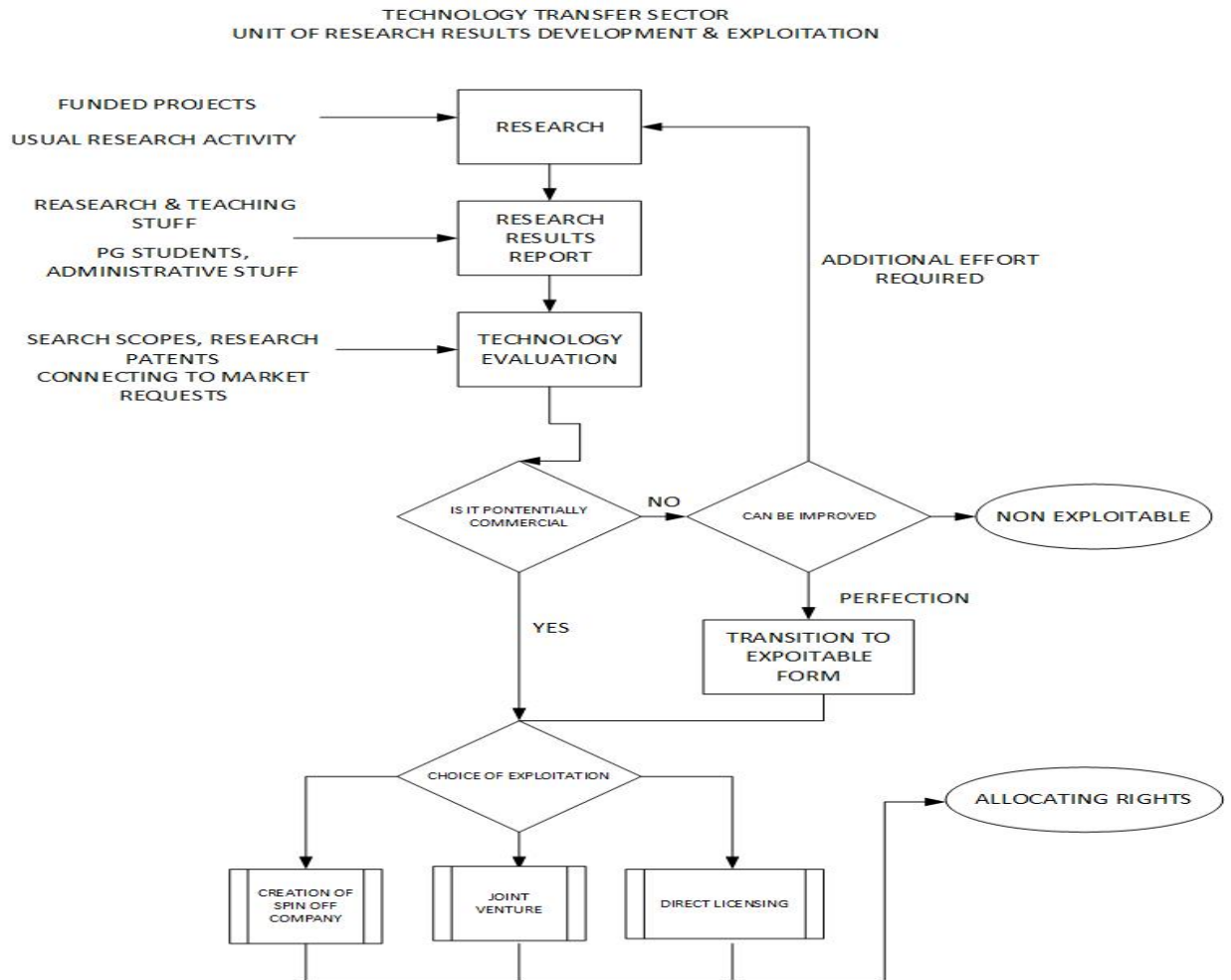


Figure 7: Organizational chart of LTTO



**Figure 8: Research Results Development & Exploitation Unit**

### 5.2 LIAISON & TECHNOLOGY TRANSFER OFFICE QUALITY MANAGEMENT

We can identify the relations between System Components and in general the managing system as pre shown on Figure 4,7,8 of the potential PUAS LTTO. The control will be regulated by number of procedures & documents given in Table 1, 2.

<b>Serial Number A/A</b>	<b>Procedure Code</b>	<b>Procedures of the QMS</b>
<b>1.</b>	<b>P 1</b>	<b>Development and Improvement</b>
<b>2.</b>	<b>P 2.1</b>	<b>Control of Documents and Records</b>
<b>3.</b>	<b>P 2.2</b>	<b>Corrective and Preventive Action</b>
<b>4.</b>	<b>P 2.3</b>	<b>Internal Audits</b>
<b>5.</b>	<b>P 3.1</b>	<b>Human Resource Management</b>
<b>6.</b>	<b>P 3.2</b>	<b>Products and Services Provision Process</b>
<b>7.</b>	<b>P 4.1</b>	<b>Counseling Service Sector</b>
<b>8.</b>	<b>P 4.2</b>	<b>Education Advice Sector</b>
<b>9.</b>	<b>P 4.3.1</b>	<b>Employment Sector (Companies)</b>
<b>10.</b>	<b>P 4.3.2</b>	<b>Employment Sector (Students, Graduates)</b>
<b>11.</b>	<b>P 4.4</b>	<b>Integrated Information System</b>
<b>12.</b>	<b>P 5.1</b>	<b>Technology Transfer Sector</b>

**Table 1: Quality Management System Procedures Catalog**

<b>Serial Number A/A</b>	<b>Record Code</b>	<b>QMS Records/Documents</b>
<b>1.</b>	<b>D 2.1.1</b>	<b>QMS Documents Catalog</b>
<b>2.</b>	<b>D 2.2.1</b>	<b>Problems and Complaints</b>
<b>3.</b>	<b>D 2.3.1</b>	<b>Audit Program</b>
<b>4.</b>	<b>D 2.3.2</b>	<b>Audit Report</b>
<b>5.</b>	<b>D 3.1.1</b>	<b>Personnel's Education</b>
<b>6.</b>	<b>D 3.1.2</b>	<b>Individual Evaluation Form</b>
<b>7.</b>	<b>D 3.1.3</b>	<b>Staff Evaluation Catalog</b>
<b>8.</b>	<b>D 3.1.4</b>	<b>Staff State Check in – Check out</b>
<b>9.</b>	<b>D 3.2.1</b>	<b>Suppliers Evaluation Catalog</b>
<b>10.</b>	<b>D 4.3.1</b>	<b>Notification Form of Available Job or Practical</b>

		<b>Training Offers</b>
11.	D 4.3.2	<b>Inventory Card/Census Form</b>
12.	D 4.3.3	<b>Companies Service Evaluation Questionnaire</b>
13.	D 4.3.4	<b>Students /Graduates Service Evaluation Questionnaire</b>
14.	D 4.3.5	<b>Loyalty card – Complaint</b>
15.	D 5.1.1	<b>Assignment of patent rights (Inventor-University)</b>
16.	D 5.1.2	<b>Confidential disclosure agreement (disclosure information) (University-Company)</b>
17.	D 5.1.3	<b>Confidential disclosure agreement (patent information) (University-Company)</b>
18.	D 5.1.4	<b>General Procedure for Disclosing an Invention (University – Inventor)</b>
19.	D 5.1.5	<b>Invention Disclose Form (University – Inventor)</b>
20.	D 5.1.6	<b>Agreement As to Invention Rights (University Research Foundation- Inventor)</b>
21.	D 5.1.7	<b>License agreement (University-Company)</b>
22.	D 5.1.8	<b>Material Transfer Agreement (nonbiological materials template) (University-Company)</b>
23.	D 5.1.9	<b>Material Transfer Agreement (outside materials- receive) (University-Company)</b>
24.	D 5.1.10	<b>Information Needed By PUAS- Sponsored Research for Requests for Materials (University – Inventor)</b>
25.	D 5.1.11	<b>Option Agreement (University-Company)</b>
26.	D 5.1.12	<b>Software License (University-Company)</b>
27.	D 5.1.13	<b>Software Transfer Agreement (University-Company)</b>
28.	D 5.1.14	<b>Terms and Conditions for Patent License (University-Company)</b>
29.	D 5.1.15	<b>Visiting Scientist Agreement (University – Inventor)</b>
30.	D 5.1.16	<b>PUAS-IRB Principal Investigator’s Manual (IRB= Institutional Review Board) (University – Inventor)</b>
31.	D 5.1.17	<b>Types of Projects: Does my Project Require IRB Review? (Environment-Investigator Control)</b>

32.	D 5.1.18	<b>Report of Potential Conflict of Interest , Outside Activity/Employment (Inside Investigator Group)</b>
33.	D 5.1.19	<b>Permission to use University Personnel, Equipment, Facilities, Students or Service Forms (University – Inventor)</b>
34.	D 5.1.20	<b>Do I Need to be Concerned About Export Controls? (University – Inventor)</b>
35.	D 5.1.21	<b>Request for Service Fee in Lieu of Facilities and Administrative Cost Rate Form (University – Inventor)</b>
36.	D 5.1.22	<b>Faculty Funding Search Request (University – Inventor)</b>

**Table 2: List of Documented Records Required**

## 6. FUTURE CHALLENGE

This new conceptual model leads to new research questions and propositions, foremost there is the relationship between the University, USP and Hi tech zone which requires further study. An interesting notion here is the fact that these USTEP's seem to have initiated after the establishment of the Hi tech industrial zones [5]. The potential PUAS Nautical STEP in Piraeus could be a response to the rapidly increasing unemployment, poor performance of the Hi tech industry in the area, lack of smart growth & rural development. When comparing this with, for example, the development of Silicon Valley a more gradual development from STEP to Industry cluster can be seen. Some propositions which can be formulated specifically in our case are:

P1: The STEP plays a major role in the facilitation of relations between firms and the prefecture/ municipality/government.

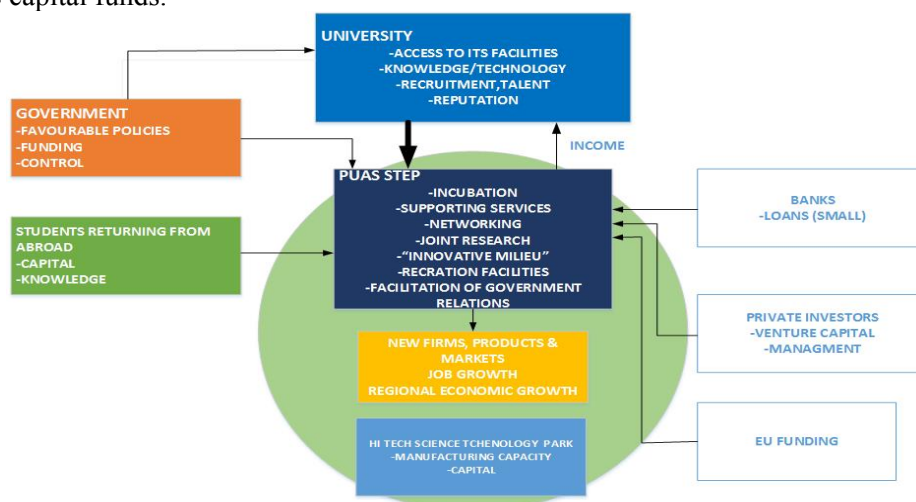
P2: A major part of STEP tenant firms consists of returned students/graduates/researchers from abroad.

P3: Returned students/graduates/researchers from abroad, bring back venture capital.

P4: Returned students/graduates/researchers from abroad, bring back Knowledge and Technology.

P5: Venture Capital is rarely provided by Greek financial institutions nowadays.

P6: Greek entrepreneurs on STEP could have access to Venture Capital, through various venture capital funds.



**Figure 9: Concept of a University Science Technology Park [5]**

Research parks are major tools around the world in regional development for those areas which have excellent engineering universities, research institutes, or a desirable living environment [6].

## 7. REFERENCES

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### Abbreviations:

Higher Education Institutes: HEI, Structure of Employment and Career: SEC, Career Office: CO, Liaison Office: LO, Practical Training Office: PTO Innovation & Entrepreneurship Unit: IEU, European Programmes and International Relations Office: EPIRO, Research Programs (Thales, Archimedes, Heraclitus): RP, Vocational Center: VC Institute for Lifelong Education: LEI, Technology Transfer Office: TTO, Intellectual Capital of University: ICU, Technology Incubation, Technology Transfer Agreements: TTA, Technology Transfer Process:TTP, Institutional Review Board :IRB, Market Opportunity Analysis: MOA, Liaison & Technology Transfer Office: LTTO, Science Technology Park: STEP.