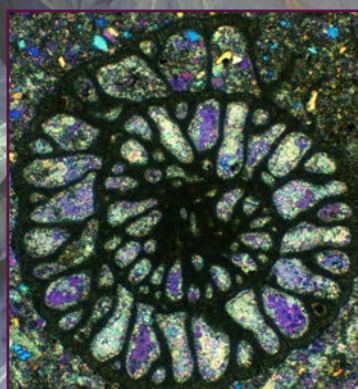
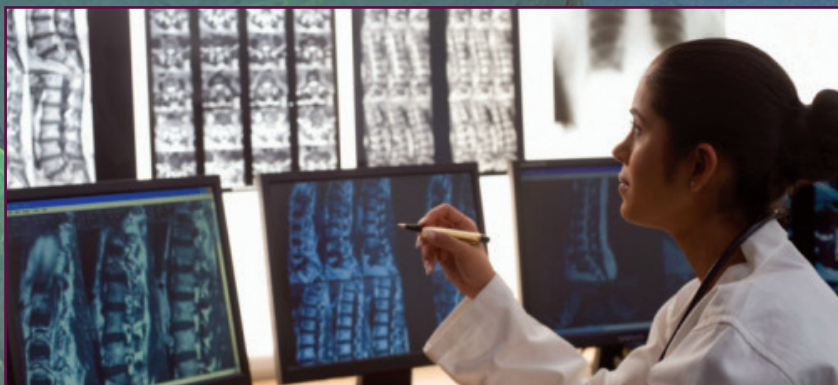


2007 - 2012: A PROGRESS REPORT

# UTEN Portugal

University Technology Enterprise Network

Entrepreneurship & Technology Commercialization:  
Building Portugal's Future



**FCT** Fundação para a Ciência e a Tecnologia  
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

**U** CRUP  
CONSELHO DE  
RETTORES DAS  
UNIVERSIDADES  
PORTUGUESAS

**inpi** instituto nacional  
da propriedade industrial

Inside front cover  
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# Leonor Parreira

Secretary of State for Science, Portugal



*The University Technology Enterprise Network (UTEN) was established in 2007, in collaboration with the University of Austin, to foster knowledge transfer between universities and industry, with the goal of increasing the economic impact of academic research. Currently, UTEN involves over 40 national university and research institutions and had an important role in creating a national network of technology transfer offices, training technology transfer professionals and bringing the issue of knowledge transfer to the forefront of universities' strategies. UTEN contributed to the incubation of Portuguese companies in international markets, offered on-site training to technology transfer professionals and developed an international business plan competition.*

*The UTEN initiative has been greatly supported by its stakeholders, namely technology transfer officers, faculty, researchers and entrepreneurs. Furthermore, in the course of the independent assessment of Portuguese collaboration with U.S. universities commissioned by the Portuguese Government, the Academy of Finland reviewed UTEN positively, clearly recommending its renewal and expansion. Based on this evaluation, the Government made the decision to build on the experience acquired through UTEN and create a novel Portugal based organization fostering knowledge transfer and the academia-industry liaison. This new organization will benefit from a close relationship with economic stakeholders as well as with research institutes and universities, thus effectively bridging the gap between academic research and industry. Its ultimate goals are to foster knowledge transfer and create successful technology-based start-ups. This will be achieved through close collaboration with existing technology transfer offices, an essential part of the national knowledge transfer ecosystem.*





# Carlos Oliveira

Secretary of State for Entrepreneurship, Competitiveness, & Innovation, Portugal

*As we all know Portugal faces a challenging economic environment caused by the urgent need to reduce its budget deficit and control its public debt. The Portuguese Government believes that improving the competitiveness of the economy is the fastest way back to a growth path and that promoting innovation and entrepreneurship is crucial to ensure a competitive and sustainable economy.*

*During the last decades, Portugal has steadily invested in innovation, not only in R&D infrastructures but also in training and improving younger generation's skills in science and technology areas. It is now time we take advantage of that investment in infrastructure and training and gear it towards productive and value added companies.*

*In fact, and despite relevant progress in the past, there is still a lot to be done to accelerate innovation and creation of economic and social value based on knowledge produced in our scientific and R&D institutions. It is clear that the link between university and industry needs to be strengthened as well as the need to target international markets in our R&D investments and innovation. In this sense, we focus on implementing policies that bring together companies and entrepreneurs with the main stakeholders in the R&D and Innovation ecosystem, with the mission of accelerating ideas and knowledge into sellable concepts and products that are able to compete internationally.*

*With this in mind the Government is working with the industry and the main science and technology stakeholders to launch the Global Accelerator Innovation Network (GAIN), following the important work developed by "UTEN" in recent years in areas such as technology transfer training, and in stimulating a culture of cooperation between industry and university.*

*GAIN's core objectives are to foster internationalization of innovation and to raise the economic impact of knowledge in our industry. We also envision that in the coming years, GAIN helps create a culture of excellence and stimulates the development of spin-offs from universities. Sustainable innovation requires constant interaction and exchanges of people and ideas between industries and universities. It is crucial that they face each other like partners instead of competitors. We believe GAIN will decisively contribute to that.*

*I count with all of you and you can count on the Portuguese Government to continue on its path of making Portugal a more innovative, productive and competitive country.*



# Miguel Seabra

President of the Foundation for Science and Technology, Portugal



*As the Portuguese Ministries, Ministério da Educação e Ciência e da Economia e Emprego, and the Fundação para a Ciência e a Tecnologia prepare to create and develop a novel organization for innovation and technology transfer acceleration, the time is right to acknowledge the remarkable contribution that the University Technology Enterprise Network (UTEN) has made to change the culture of commercialization of science and technology innovations amongst Portuguese universities and research centers. Indeed, the new organization will be built on what UTEN has created, in terms of knowledge capital, credibility, networks and experience.*

*Set up initially within the UT Austin | Portugal Program (partnership with the University of Texas at Austin), one of four partnerships established with American institutions, UTEN has grown, so that it now brings together over 40 Portuguese Institutions, including Universities, research centers and industry. All have greatly benefited from the conferences, workshops, seminars, international internships and training, and brainstorming sessions organized by the network. Furthermore, besides training technology transfer professionals, and helping to establish a network of technology transfer offices, UTEN has set a foot in the door for Portuguese science-based spin-offs to reach international markets.*

*In the future, we expect to strengthen the existing network between academia and industry to increase the flow of concrete technology transfer deals so that the knowledge generated by Portuguese Universities may be put to productive use for the benefit of the Portuguese economy and society. Additionally, we plan to expand the portfolio of activities to continue to develop world-class technology commercialization in Portugal.*



# *António Rendas*

President of the Portuguese Council of Rectors, Portugal

*The “University Technology Enterprise Network” (UTEN) was established in 2007 as part of the collaboration between Portugal and the University of Texas in Austin. Since its beginning UTEN extended the limits of this partnership and fostered a wide network of institutions aimed at knowledge valorization and promotion of academic entrepreneurship.*

*The recent evaluation by the Academy of Finland of these partnerships, performed at the request of the Secretary of State for Science, considered UTEN as one of the most relevant initiatives and recommended that it should be expanded in order to include not only the University of Texas in Austin but also the other two American partners: MIT and Carnegie Mellon.*

*In order to follow this recommendation the UTEN network will be part a more broad project, to be launched soon, aiming at further improve the links between universities and industry through an acceleration of the technology transfer process.*

*UTEN comprises a network of about 40 universities and research institutions and involves a staff of young and committed university technology managers who play a key role in capacity building in this area, at institutional level. Most have them have benefited from the international links established with UTA through a very successful bilateral exchange program involving training activities both in Portugal and in Austin.*

*For all these reasons I want to express my gratitude, both personal and on behalf of the Portuguese Council of Rectors, for the excellent work developed by UTEN during these five years and take this opportunity to wish every success to the new program.*

# José Mendonça

Scientific Director for University Technology Enterprise Network, Portugal



*Over past centuries Portugal has benefitted tremendously from three main eras of internationalization. International trade and cooperation brought resources feeding both the colonial empire military power and its economic development. India in the 15 and 16 hundreds, Brazil between the 16th and 18th century and Africa in the 19 and 20th century gave the country access to economic development and wealth essentially built on access to resources and trade. Meanwhile, Portugal completely missed the industrial revolutions in the 19th and early 20th centuries and failed to use the country's resources in education and social development. Only after 1974, using EU cohesion funds there has been significant and persistent investment in both infrastructures and education as well in the modernization of the economic fabric. Consistent investment policies in science and technology started only in the 80's, but in a few more than the last two decades areas of science were brought to world-class level, science-based companies leaped from university to global markets and established companies sourced knowledge from research as to face international competition. Successful examples can be found at the shoe industry, electrical machines, software or pharmaceutical, but always applying both cutting edge technologies and novel business strategies.*

*During the current crisis, Portugal is facing significant new challenges in once again finding a successful path to building a strong economy creating wealth and jobs. The sudden loss of the internal markets pushed companies to realign their strategies and rising exports became the guardian angel slowing down and delaying what would be an even more abrupt fall of the economy. All those that have praised service economy as the model for Portugal for the last decades, have started crying out for reindustrialization and transaction-based sectors. But it is clear that Portugal cannot return to the industry base of past eras. Portugal has made significant investments in graduate education and research, and what is most needed now is capacity building in science and technology commercialization for international markets. During the last five years, UTEN has made significant contributions to such capacity building for Portuguese technology transfer managers and staff and university-based entrepreneurs, tapping new ground for a nation-wide entrepreneurial culture. I would like to gratefully acknowledge all those many that have put their effort and talent in leveraging the modest resources of the program. It is now clear that Portugal has the capacity to enhance the international competitiveness of traditional enterprises as well as to launch globally competitive start-up ventures, but it is also clear that the successful examples are not sufficient for the nation to grow the needed jobs and wealth. And it is more than obvious that the work undertaken by UTEN has to be magnified, extended, renewed, fostering partnerships between researchers and entrepreneurs committed in working hard to bring to society the economic benefits and social relevance of science. After India, Brazil, Africa and EU structural funds, Portugal has to build its fifth empire on science and technology based on talented and skilled youngsters that are the country's best-qualified generation ever. Now is the time.*





# Robert Peterson

Assistant Vice President for Research, The University of Texas at Austin

*Six years ago the Portuguese Ministry of Science, Technology, and Higher Education, the Portuguese Foundation for Science and Technology, and The University of Texas at Austin, with the collaboration of the Portuguese Council of Rectors, created the University Technology Enterprise Network, colloquially known as UTEN. The goals of this network for Portugal were multifaceted, including imbuing university technology transfer offices with best practices, stimulating the development and commercialization of university intellectual property, and generally encouraging entrepreneurship in universities in Portugal. Over time this network grew to include more than 40 Portuguese entities—universities, research laboratories, and government agencies. Today UTEN is a mature network that has exceeded its goals and is a model for national and international cooperation.*

*The present report documents the many successes of UTEN in the most recent year and across its years of existence. Read the report to discover the dynamic nature of university commercialization attempts in Portugal. Although it is possible to point to quantitative metrics of success such as increases in research output, disclosures, patents, revenue, and spinouts, perhaps the most enduring accomplishment, yet one admittedly difficult to capture quantitatively, has been the cultural change witnessed in many of the participating universities. No longer is the notion of “research commercialization” in universities an oxymoron or a behavior to be avoided, but rather an activity to be rewarded and celebrated.*

*This annual report chronicles the culmination of meaningful research-and-development collaborations within and between universities over the period of the cooperation. As such, the catalytic nature of the network should be recognized as a nexus for generating both the excitement and the “glue” that respectively brought individuals and institutions together and holds them in innovation-based research for the benefit of society.*

*In one sense, UTEN can be considered a lengthy pilot activity or even a foundation for the next phase of commercializing the intellectual property residing in the laboratories and minds of university scientists and researchers. Fully unlocking that intellectual property constitutes an important goal of the successor to UTEN and the subject of phase two. Digest this report to both gain an understanding of the research and commercialization efforts that have occurred in Portuguese universities as well as gain an insight as to what the future holds for university research and its commercial culmination as well for the economic impact of this program in Portugal. And this is just the beginning...*



Entrepreneurship & Technology Commercialization:  
Building Portugal's Future

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## 1. UTEN: A Retrospective Overview

*“After a remarkable effort in investing in research (effectively turning money into knowledge) the time has come for Portugal to command the imperative of turning knowledge into money.”*

José Mendonça (2008)  
Scientific Director for UTEN

## 1.1 Portugal: A Country of Science and Technology

When UTEN was initiated in 2007, Portugal had recently witnessed its highest increase in R&D expenditure, representing for the first time more than 1.2% of its GDP, equaling or surpassing those levels reached by Spain, Ireland and Italy (see figures 1.1 and 1.2). The rise in R&D expenditure had been matched overall by the business sector, which had doubled such expenses in that period (having reached more than half of the R&D total expenditure).

The IT services sector reflected the highest percentage of Portuguese researchers in the business sector, followed by services companies, the equipment industry, financial services and insurance. Data also showed a rise, before then unseen in Portugal, in the number of companies with R&D activities, which had doubled within the last four years. This growth in business sector expenses for R&D reflected the effort of the private sector to meet the nation's new scientific development and technology capacity. Portugal offered the most competitive system of fiscal incentives for R&D in Europe, facilitating tax deductions of up to 82.5% of the investment in R&D.

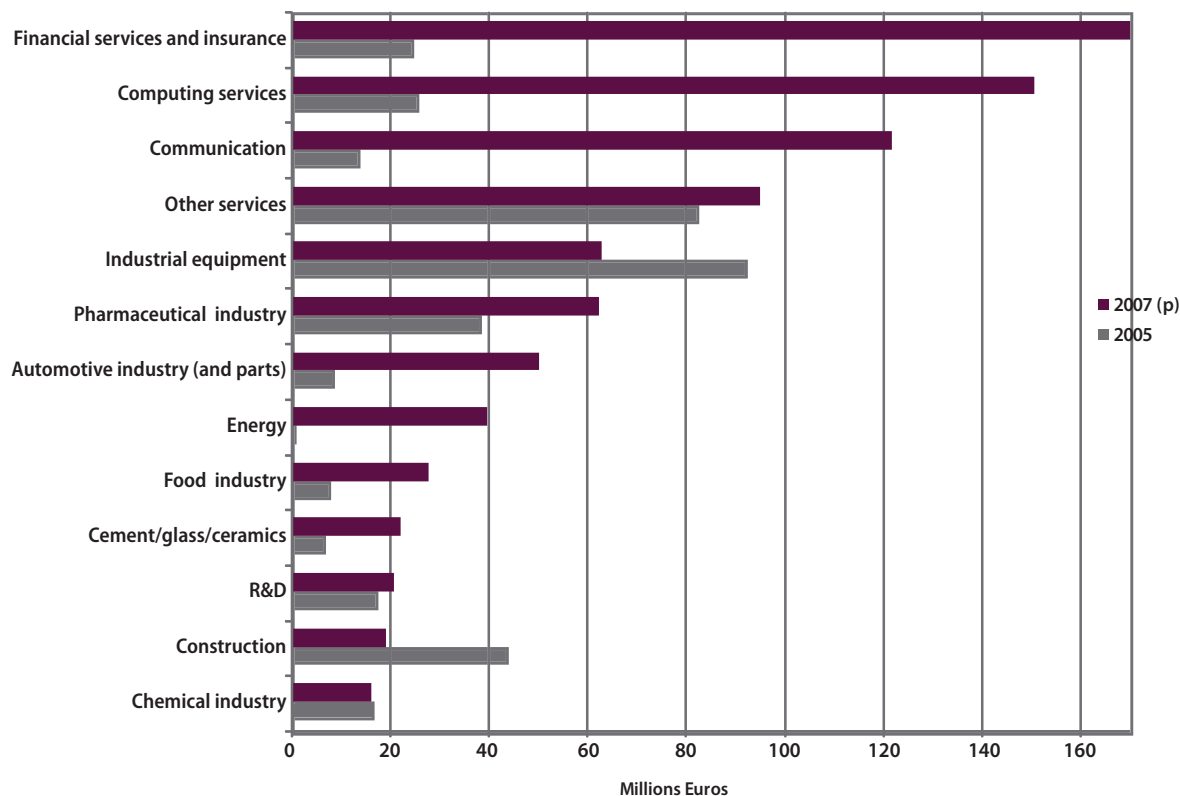
This increase in R&D expenditure also reflected the policy priority for science and technology development, having been followed by a rapid increase in the number of researchers within the labor force from 3.8% in 2005 to 5% in 2007, (nearing the EU average) and representing one researcher per 200 employees.

The number of researchers in Portugal had doubled in a single decade, and around 44% were women (see Figure 1.3), making it one of a few countries in which the number of males and females working in scientific research was nearly par.

The priority given to this rapid scientific and technological development had already been accompanied by a strong mobilization within the scientific community with visible results at an international level. Portugal's increasingly internationalized scientific community, young and evenly balanced between men and women, was highly productive, and experiencing a period of clear growth. The national scientific output rose by 18% in a span of two years, measured in terms of the number of scientific publications in recognized journals. Among the five most cited scientific articles in the EU, two included collaboration with Portuguese authors.

Strong growth had also recently been seen in the number of doctorates undertaken and recognized by Portuguese universities—about 1,500 new doctorates per year, around half earned in science and technology disciplines. This S&T development in Portugal was accompanied by a profound reform of higher education. This reform opened up higher education to society and to other social groups, to mobility and international recognition, as well as to the recognition of diversified education programs, and to curricular diversity. This development was already accompanied by a process of international growth in academic institutions, specifically stimulated through strategic alliances

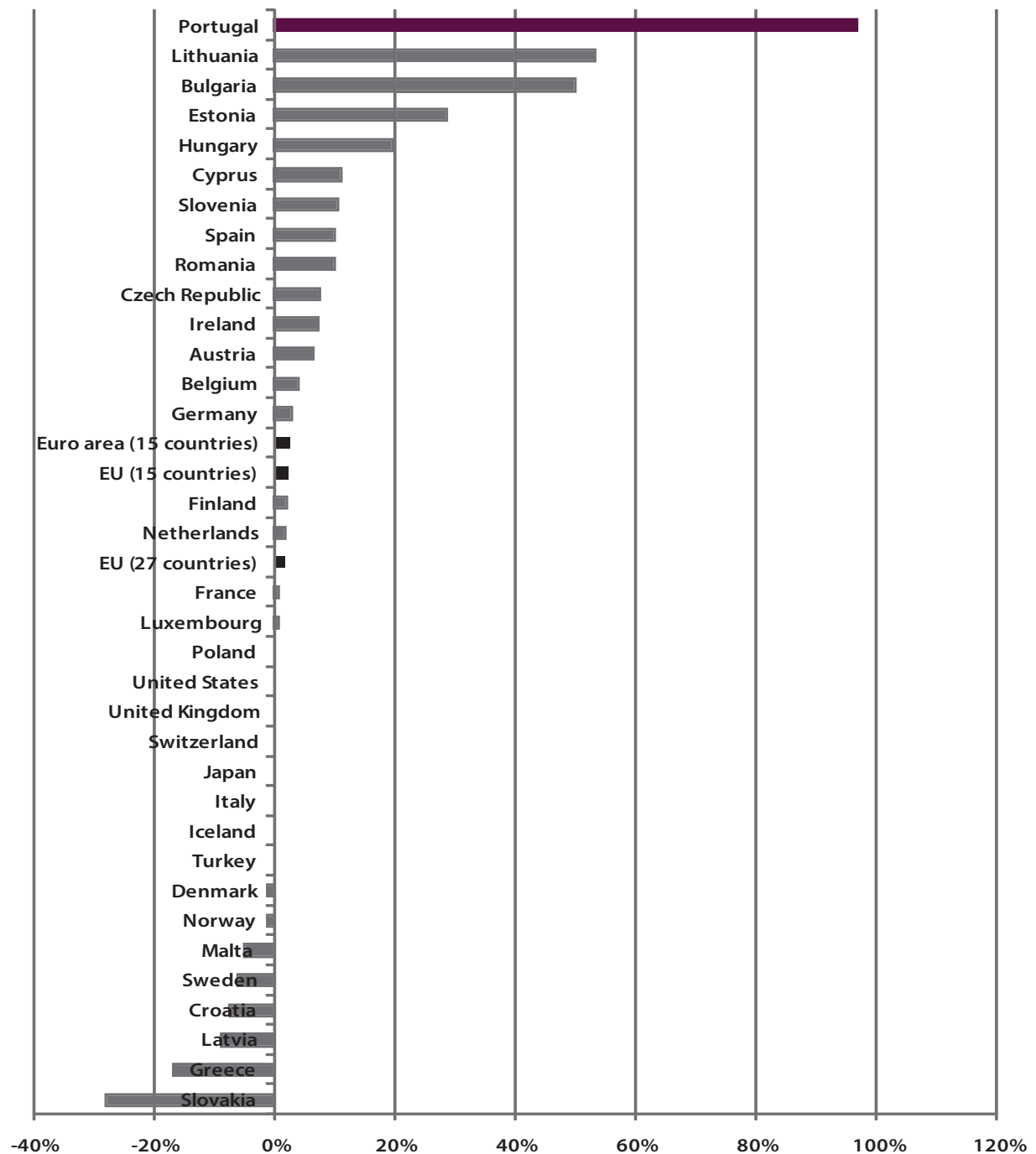
**Figure 1.1 Private expenditure in R&D in the main sectors of activity (2005 and 2007)**



Source: GPEAR / MCTES - Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais / Ministério da Ciência, Tecnologia e Ensino Superior, Inquérito ao Potencial Científico e Tecnológico Nacional (IPCTN). Note: (p) provisional data.



**Figure 1.2** Changes in private R&D expenditure as percentage of GDP, 2005-2007



Source: GPEARI / MCTES - Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais / Ministério da Ciência, Tecnologia e Ensino Superior, Inquérito ao Potencial Científico e Tecnológico Nacional (IPCTN).

with institutions of great international significance. At the same time, science and technology based entrepreneurship was increasingly seen as a key element of Portugal's ability to grow and prosper. Research universities had worked to foster a range of technology transfer and commercialization activities and offices, together with industrial liaison programs, mostly devoted to fostering entrepreneurial environments, launching technology based start-ups, and bringing ideas from the laboratory to the market.

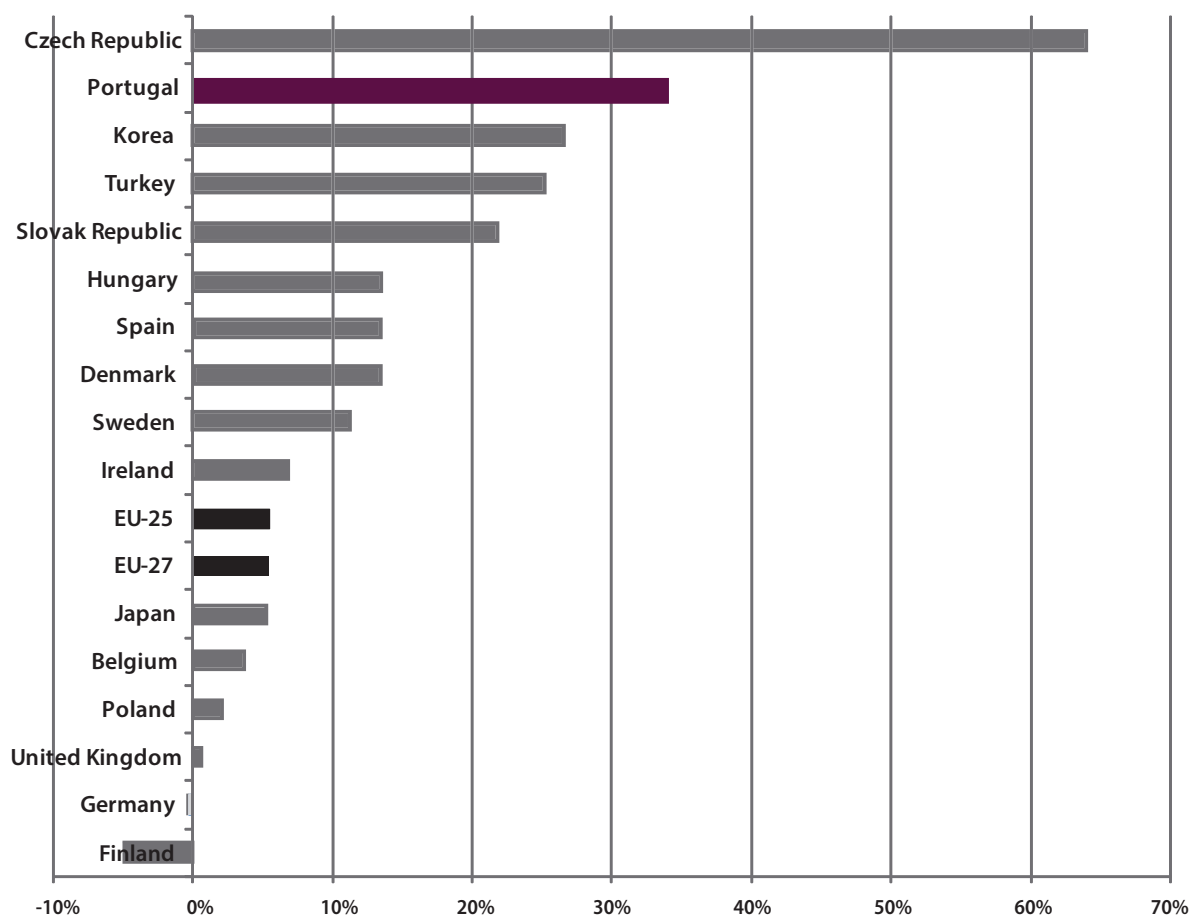
UTEN was created to synergize this growth and stimulate new competencies in international technology transfer and commercialization to facilitate industry access to leading markets worldwide.

## 1.2 Capacity Building for Portugal's Future

While it is clear that Portugal has climbed the charts in PhDs granted and R&D funding, as well as in IP generated, and licensing of technology to industry—it is also clear that, such advancements, in themselves, *are not sufficient*—as witnessed in Portugal's current position in the global economy. In short, the significant challenges Portugal currently faces center on 1) retaining the country's educated talent by developing high value jobs and careers, by 2) commercializing Portuguese S&T in global markets to the create these new jobs and regional wealth across Portugal. The goal of the University Technology Enterprise Network (UTEN), from its inception in 2007, has been the enhanced training



**Figure 1.3** Changes in the number of total researchers (FTE) per thousand active labor population for the period 2005-2007



Source: MSTI-2008, OCDE. Portugal: GPEARI / MCTES - Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais / Ministry of Science, Technology and Higher Education, Inquérito ao Potencial Científico e Tecnológico Nacional (IPCTN), provisional data.

and network building, on an international scale, of Portugal's technology transfer managers and staff, and technology entrepreneurs—an effort initiated under the leadership of the FCT, INPI, and the IC<sup>2</sup> Institute at The University of Texas at Austin.

UTEN's network includes 15 Portuguese universities and select technology parks and research centers. It focuses on capacity building for the accelerated commercialization of Portuguese S&T. UTEN is also tightly linked with Portugal's international collaborations that focus on enhancing education and research excellence in targeted sectors at Portugal's leading research universities. In their entirety these programs have been a substantial investment in financial, and human resources devoted to Portugal's enhanced competitiveness in the knowledge-based global economy of the 21<sup>st</sup> century:

- *The International Collaboratory for Emerging Technologies, CoLab* ([www.utaustinportugal.org](http://www.utaustinportugal.org)) with The University of Texas at Austin
- *The MIT|Portugal Program in Engineering Systems*, with the Massachusetts Institute of Technology ([www.mitportugal.org](http://www.mitportugal.org))
- *The Information & Communication Technologies*

*Institute, ICTI*, with Carnegie Mellon University ([www.cmu.edu/portugal](http://www.cmu.edu/portugal))

- *The Harvard Medical School–Portugal Program* in Translational Research and Information, ([www.hmsportugal.org](http://www.hmsportugal.org))
- *Fraunhofer Research Portugal* ([www.fraunhofer.pt](http://www.fraunhofer.pt)) through FhP AICOS, the Research Center for Assistive Information and Communication Solutions.

Portugal stands unique in conceiving, launching, and continually assessing UTEN as an international program for capacity building focused on commercialization of academia S&T to business development and venture creation. These challenging tasks are key to wealth and job creation—in emerging, developing, and developed economies—especially during the current global financial challenges. If it were easy to launch and build globally competitive national and international technology-based companies then all nations would be doing it. It is not easy. And while Portugal has select examples of such successes, more needs to be done. The following pages demonstrate UTEN's devotion to address these challenges and to produce significant results.



David Gibson, Director UTEN Austin, and José Mendonça, UTEN Scientific Director, address an early UTEN workshop (2009).

UTEN has been continually enhanced from 2007 through 2012, to provide much-needed training in technology transfer and commercialization, together with increased access to international networks, in order to increase *capacity building* that would:

- Strengthen Portuguese academic-industry linkages
- Increase technology-based entrepreneurship
- Accelerate firm growth nationally and globally.

These capacity-building programs and activities over five years are reviewed and summarized in this report.

*“UTEN is breaking new ground and exploring new paradigms in the commercialization of university-based technologies. There are two distinct features of UTEN that set the network apart from other activities in technology transfer anywhere else in the world. First, it is a national effort involving 15 universities with strong central support from the Portuguese MSTE and FCT and, second, it has consciously defined the global market as its target and theatre of operations.”*

Juan Sanchez (2009)  
Vice President for Research  
The University of Texas at Austin

### *UTEN Vision*

The vision of the University Technology Enterprise Network was to build a network of highly trained professionals in science and technology (S&T) transfer and commercialization. The effort had already been placed to establish Technology Transfer Offices in major universities across Portugal—UTEN was to mobilize this new resource. The UTEN network was to span Portugal and to intersect the globe; it was to become self-sustaining within five years. In pursuit of this vision, UTEN provided immersive training events to develop skills and professional competence at home, while introducing participants to international subject matter experts and industry contacts. The skills and the relationships that would result were to ground the UTEN network to, in turn, foster international technology-based entrepreneurship and business development throughout Portugal.

While based on a considerable understanding of entrepreneurial education, business incubation, regional development, and the power of positive policies to contribute to a knowledge economy – the UTEN program was of unique design, and presented a “new angle of approach” for a higher education program

that might impact a nation's capacity for technology commercialization, and help launch technologies from university laboratories to global markets. This new trajectory has been agile in nature, with proactive response to program feedback. Thus the program has evolved continually to meet new audiences with new events.

### UTEN Strategy

UTEN's strategy has been to leverage programs and activities to build sustainable partnerships and networks among technology transfer and commercialization experts and centers across Portugal (UTEN Portugal), as well as with globally competitive international experts and centers of technology commercialization to:

- Strengthen Portuguese industry-science relations, intellectual property management, and technology transfer and commercialization competence for international markets
- Foster entrepreneurial vision and competence in Portuguese academia, business, and civic organizations
- Provide productive international networking opportunities for Portuguese technology transfer managers and staff, technology-based companies, and start-ups
- Deepen Portuguese understanding of the challenges and opportunities of university-based technology transfer and commercialization nationally and globally
- Benefit from national and international experience and case studies on how to promote regionally based, globally networked technology development and commercialization
- Brand Portugal as a creative, innovative nation that successfully attracts, educates, and retains world-class research and entrepreneurial talent.

**Table 1.1 UTEN Workshops and Training Weeks, 2009 - 2012**

Title	Attended	Year	Event
Startup funding: Streamlining venture capitalists & business angels	19	2012	Int'l workshop
Bayh-Dole Act: Opportunities for Portugal	22	2012	Int'l workshop
Patent portfolio strategic management	12	2011	Training week
Evaluation of intangible assets	16	2011	Training week
From the lab to the market: Deep analysis of a real case	14	2011	Training week
Negotiation of research contracts	10	2011	Int'l workshop
Development of social entrepreneurial ventures	18	2011	Int'l workshop
Copyright for creative industries	12	2011	Int'l workshop
Increasing commercialization outcomes for university nanotechnology laboratories	11	2011	Int'l workshop
Commercialization of space technologies	10	2011	Int'l workshop
Licensing & negotiation	33	2010	Training week
Capital sourcing & technology venturing	32	2010	Training week
University spin-off & venture creation	23	2010	Training week
University-based technology business incubation	20	2010	Training week
Setting up & managing an Industrial Liaison Office	22	2010	Training week
Nanosciences: Research collaboration & network building for commercialization	31	2010	Int'l workshop
Marine & biosciences: Research collaboration & network building for commercialization	32	2010	Int'l workshop
Commercialization & technology transfer in information & communication technology	25	2010	Int'l workshop
Licensing & negotiation	33	2009	Training week
Experiencing technology transfer with Carnegie Mellon	30	2009	Int'l workshop
Experiencing technology transfer @ Cambridge University	28	2009	Int'l workshop
Case studies on technology transfer & IP protection (Fraunhofer)	29	2009	Int'l workshop
From the lab to the market place: Obtaining strong patents for technology transfer & commercialization (General Electric)	32	2009	Int'l workshop
Experiencing technology transfer: Fostering a new dialogue with MIT	47	2009	Int'l workshop
Technology transfer with The University of Texas at Austin	51	2009	Int'l workshop





Kate Mackie addresses the UTEN International Intern group at the IC<sup>2</sup> Institute, The University of Texas at Austin (2009).

UTEN was conceived as a cooperative network aggregating entities and individuals in Portugal concerned with technology transfer, with a single major goal: Improving and accelerating the transformation of Portugal's science and knowledge into economically valuable innovative solutions as well as addressing societal problems in a global context.

### 1.3 Programs and Activities

Since its inception, UTEN programs and activities have catalyzed sustainable, value-added partnerships and networks with key international partners while continually increasing its network reach within Portugal:

- Expanding the UTEN network by adding Portuguese institutional partners
- Expanding programs and activities to new international audiences
- Training an increasing number of Portuguese TTOs and associated entrepreneurs and professionals.

UTEN established and new creative learning mechanisms have focused on capacity building through innovative technology transfer practices, related know-how, commercialization skills, and developing both formal and informal national and international networks. UTEN programs and activities include International Internships, Specialized Training and Networking, Technology Commercialization, Observation and Assessment, and Institutional Building as follows:

#### *International Internships & On-the-Job Training*

UTEN has organized FCT-sponsored international internships (both short- and medium-term) to mentor Portuguese professionals and researchers as they simultaneously work on Portuguese technology portfolios for licensing and on-shoring in international markets. Key objectives include securing successful licensing deals and helping S&T spin-offs to "soft land" with technology bundling, cross licensing, and other international partnering activities. While initially hosting interns throughout the state of Texas, with time UTEN added U.S. internship opportunities at Carnegie Mellon University, Massachusetts Institute of Technology, Boston University, and the University of Southern California. In Europe, UTEN Interns have been placed with the Fraunhofer Institute, the European Space Agency (ESA) and Cambridge Enterprise.

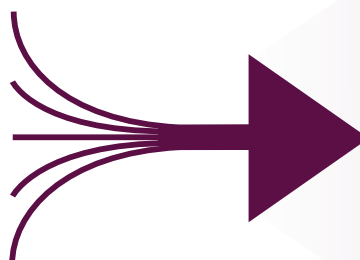
#### *Specialized Training and Networking*

Professional networking is an important value-add of international workshops, training weeks, in-situ (in-situation) training, leaders roundtables, and initiation brainstorm all of which are implemented in close collaboration with Portuguese universities, research centers, associated laboratories, and companies. These events have provided a series of highly informative sessions to help promote a common dialogue across Portugal in technology commercialization, business incubation, and fostering an entrepreneurial ecosystem. In-depth training has been provided on topics such as:

- Technology assessment
- IP protection and exploitation

UTEN continually focuses on increasing the capacity of individual participants, as well as the capacity and sustainability of the network...

Networking building & developing programs: **Year 1**  
 Establishing the framework: **Year 2**  
 Building national momentum: **Year 3**  
 Sharpening focus: **Year 4**  
 Increasing ownership & institutionalization: **Year 5**



INCREASING SCOPE  
SUSTAINABILITY

- Business valuation
- Business incubation
- University technology portfolio management
- Entering international markets & securing on-shoring opportunities
- Contracts, partnering & negotiation
- Case studies in detail
- Industry-specific application of UTEN topics
- TTO processes and management.

To date UTEN has provided:

- 19 international workshops
- 9 training weeks
- 3 in-situ training opportunities
- 3 leaders roundtables
- 6 initiation brainstormers
- 3 Three Day Start-up events

### Technology Commercialization

UTEN has also provided some specific events to help focus on developing new businesses and helping them prepare for entrance in international markets.

*USConnectforInternationalBusiness:* In close collaboration with Portuguese TTOs and other international UTEN partners, this pilot program with the IC<sup>2</sup> Institute at The University of Texas at Austin identified university-based startups and technology ventures that possessed high capability for international business success and worked with them to establish successful business startups, alliances, and relationships in the U.S. market.

*ISCTE-MIT Technology Ventures Competitions:* UTEN worked closely with ISCTE-MIT and other entities to develop and promote venture competitions across Portuguese universities and to foster the development of successful S&T-based business ventures.

*Entrepreneurship in Residence:* Carnegie Mellon University is launching EIR with the UTEN program

to help Portuguese companies enter the U.S. market. EIR includes training, mentoring, and provides opportunities for collaborating with potential industry partners.

### Observation and Assessment

The central focus of UTEN's assessment effort is the continued observation and dissemination of lessons learned concerning challenges and successful projects and ventures to help assess and improve the performance of technology transfer and commercialization across Portuguese institutions. These efforts further the larger goal of the continued professionalization of Portuguese TT managers and staff. To this end UTEN conducts:

- In-depth program evaluations of international internships, international workshops, training weeks, in-situ training, and leaders roundtables
- Annual surveys of national TTOs, performed cooperatively with Portuguese and UT Austin researchers
- Annual surveys administered to all UTEN partner institutions to help monitor the challenges and best practices of technology transfer and commercialization in Portugal
- Case study development associated with Portuguese startups and university spin-offs.

## 1.4 Institutional Building

To strengthen UTEN's structure, organization, and leadership, UTEN has established routines for its partner institutions (including the existing network of TTOs, the Council of Rectors (CRUP), the Portuguese Institute for Industrial Property (INPI), and the FCT to help build relations and increase collaborations across Portugal and with international partners. Special emphasis has strengthened UTEN's governance model in close collaboration with CRUP, and the following "governance structure" has been activated:

- *General Assembly:* is co-chaired by the President of FCT and the President of CRUP, and is comprised

of representatives from all UTEN Portuguese institutions. The General Assembly reviews past achievements, evaluates and approves planned activities, and discusses the network's major issues and future strategies.

- *Executive Committee*: selected network leaders who collaborate directly with the Scientific Director, in close contact with the Coordination Office at FCT, to implement UTEN's mission, strategy and planned activities outlined in the annual program.
- *Scientific Director*: chairs the Executive Committee, the Coordination Office and Secretariat, and coordinates relationships with FCT, CRUP and INPI.
- *Coordination Office and Secretariat*: manages administrative and organizational issues, as well as the Secretariat and the UTEN website (chaired by the Scientific Director).
- *International Advisory Board*: facilitates experts in technology transfer and commercialization to provide guidance for UTEN development, as well as international promotion and "branding" of technology transfer and commercialization activities in Portugal.
- *External Review Committee*: is an independent body of international experts who monitor UTEN achievements and provide an annual critical assessment.

### *The Dissemination of UTEN Information*

- The UTEN program web page, [www.utenportugal.org](http://www.utenportugal.org), provides open (and archived) access as it promotes all UTEN activities and programs.
- UTEN's Technology Database ([www.techportugal.com](http://www.techportugal.com)) contains a portfolio of Portuguese university-developed technologies and companies that work with UTEN institutions. Information includes technology descriptions, features and benefits, and contact information.
- CoLab Square newsletter publishes monthly updates (September through July) of all activities of the UT Austin | Portugal International Collaboratory for Emerging Technologies including UTEN. The newsletter keeps members updated on events and opportunities.
- The UTEN Portugal Facebook page <https://www.facebook.com/UtenPortugal> signals the entrance of UTEN in the social networks realm, allowing all UTEN members and others to be in permanent connection with UTEN Portugal and keep up to date with all UTEN news and events.

UTEN continues to collect data and submit research papers for publication in leading journals and conferences. Examples include:

- "Experimenting Innovation through Science and Technology Networks: a new paradigm for technology commercialization?," Marco Bravo,

Manuel Heitor, and Jose Mendonça, presented at the International Conference on Technology Policy and Innovation 2011.

- "Uma Ferramenta de Análise Subjectiva das Instituições que Transferem Tecnologia," David Resende, presented at Tecnologia e Sociedade, Universidade Tecnológica Federal do Paraná, Brasil, May 2008.
- "A Tool for Subjective Analysis of Entrepreneurial R&D Institutions," David Resende, presented at IAMOT 2008, hosted by the British University in Dubai, April 2008.
- "Diferentes Aspectos Da Transferencia de Tecnoloia: construindo Unha Rede de Teansferencia de Tecnoloia Competitiva a Nivel Global," David V. Gibson and Darius Mahdjoubi, Revista Galega de Economia, Vol. 19, (2010), pp. 209-220.
- "Investing in Innovation to Enable Global Competitiveness: The Case Of Portugal," David V. Gibson and Heath Naquin, Technological Forecasting and Social Change, 2011.
- "BTP-Best Transfer Practices: A Tool for Qualitative Analysis of Tech-Transfer Offices, A Cross Cultural Analysis," by David N. Resende, David V. Gibson, and James Jarrett in Technovation, 2012.

## **1.5 Programs, Activities & Events**

### *Years 1 and 2 (March 2007- August 2008)*

- Relationship and network building
  - » Working with the willing
  - » UTEN-sponsored awareness-building visits to Portugal and Texas
- S&T portfolio assessments at select Portuguese universities
  - » Meeting university TTOs, researchers, and entrepreneurs
  - » Building Portugal S&T database
  - » RapidScreens and MarketLooks
- Pilot "learning by doing" for S&T internationalization
- Building Texas UTEN Partners Network
  - » UT Austin Technology Incubator (ATI)
  - » UT Austin Office of Technology Commercialization (OTC)
  - » UT Dallas OTC
  - » Texas A&M OTC, College Station
  - » South Texas Technology Management (STTM), San Antonio
  - » Triton Ventures, Austin
  - » INCELL (biosciences), San Antonio
- First UTEN national conference, Lisbon

### *Year 3 (September 2008 – August 2009)*

- Nine international workshops
- Two international conferences



- Twenty-three international internships
  - » Two two-week intensive workshop training programs at IC<sup>2</sup> Institute
  - » International intern hosts: UTEN Austin (15); Fraunhofer (1); European Space Agency (1); Carnegie Mellon University (4); Boston University (1)
- First UTEN annual report, 2008-2009
- Continued training and network building activities Portfolio assessments at select universities; meeting university TTOs, researchers, and entrepreneurs; building Portugal's S&T database; "learning by doing" S&T international commercialization.

#### *Year 4 (September 2009 – August 2010)*

- Six international workshops focusing on technology sectors: Technology transfer @ Cambridge University; Experiencing Technology Transfer: Collaborating with Carnegie Mellon; Commercialization & Technology Transfer in Communication Security and Information Networking; Marine and Bioscience; Nanotechnology Research and Valorization
- Six regional training weeks for in-depth training Licensing and Negotiation; Capital Sourcing; Venture Creation; Technology Business Incubation; International Liaison Office Management; Patent Portfolio Strategic Management
- International internships, second phase UT Austin, Carnegie Mellon University, Cambridge Enterprise
- Second UTEN national conference, Lisbon
- Pilot in-situ training: TecMinho, University of Minho, and FCT, New University of Lisbon
- Pilot soft-landing: University of Texas and Texas A&M incubators
- First ISCTE-IUL MIT | Portugal ventures competition
- Continued training and network building activities: Portfolio assessments at select universities; meeting university TTOs, researchers, and entrepreneurs; building Portugal's S&T database; "learning by doing" for S&T international commercialization.
- Second UTEN annual report
  - » First TTO survey
  - » First university technology academic spin-off survey
  - » Portuguese case studies on internationalization.

#### *Year 5 (September 2010 – August 2011)*

- Six international internships: UT Austin (3); MIT (1); Carnegie Mellon University (2); University of Southern California (1) (Note: One intern was hosted by both UT Austin and MIT.)
- One reverse internship, pilot program
- Four thematic workshops: Development of Social Entrepreneurial Ventures, Commercialization of space Technologies, Research Collaboration

& Network Building for Commercialization: Nanotechnology and Life Sciences, Technology Transfer Within Creative Industries, Arts, and Humanities.

- Three training weeks: Patent Portfolio Strategic Management; Evaluation of Intangible Assets; and From Lab to Market: Deep Analysis of Real Cases.
- Six initiation brainstorming sessions with students, Pilot Program: Entrepreneurship Day @ AAMinho, AAUTAD, AACCoimbra, IST, FAP, Clube Enova, UNL.
- Three leaders roundtables, pilot program: Benchmarking Best Practices on Managing Technology Incubators, Benchmarking Best Practices in Managing an Effective TTO, and Benchmarking Best Practices in International S&T Commercialization.
- Third UTEN national conference
- Second ISCTE-IUL MIT | Portugal ventures competition
- US Connect for International Business Development, pilot program developed with The University of Texas at Austin
- Entrepreneur in Residence, pilot program developed with Carnegie Mellon University
- Observation and Assessment
  - » Third UTEN Annual Report
  - » Second TTO Survey
  - » Second University Technology Academic Spin-off Survey
  - » Technology Transfer Offices in Universities: Emerging Challenges
- UTEN institution building: Formation of UTEN General Assembly, Scientific Director and Executive Committee; Coordination Office and Secretariat; International Advisory Board; and continuation of External Review Committee.

#### *Year 6 (September 2011 – December 2012)*

- US Connect pilot program on business development, with the participation of various Portuguese startups, UT Austin | Portugal
- Copyright for the Creative Industries, in conjunction with the FuturePlaces Digital Media Festival of the UT Austin | Portugal CoLab
- From the Lab to the Market, training week with UT Austin | Portugal
- UTEN Annual Conference 2011
- Negotiation of Research Contracts, workshop with Fraunhofer-Portugal
- Bayh-Dole Act workshop, UT Austin | Portugal
- 3 Day Startup in Coimbra, UT Austin | Portugal
- Startup Funding workshop, CMU-Portugal
- Nanotechnology commercialization exploratory visit of UT Austin researchers to the International Iberian Nanotechnology Laboratory (Braga),

sponsored by the National Science Foundation (NSF), with UT Austin|Portugal

- In-situation training at Instituto Pedro Nunes (Coimbra), with UT Austin|Portugal
- Reverse internship of Rosemary French at UPIN, University of Porto
- 3 Day Startup in Porto, with UT Austin|Portugal
- Entrepreneurship and Regional Growth, strategic session with CMU-Portugal
- Connection to Europe, reception of five European delegations to present successful examples of innovation and technology transfer policies in a university environment, Porto
- 3 Day Startup in Lisbon, with UT Austin|Portugal
- Observation and Assessment
  - » Fourth UTEN Annual Report
  - » Third TTO Survey
  - » Third University Technology Academic Spin-off Survey
- UTEN Annual Conference 2012

## 1.6 Networking Approach

In networked systems that support many of today's critical services such as roads, energy grids, telecommunication infrastructures, etc., there is a well-known difficulty referred to as "the last mile problem." The (common) difficulty is bridging the gap from a local high-throughput distribution center to every single consumer home, equipment or individual, so that the service delivery point can actually (physically) meet the consumers, satisfying their needs and thereby producing value. The challenge is to feed the network with valuable content while providing it with the required capillarity to bridge the gap and avoid connectivity problems.

UTEN was born as a concept or a vision of a cooperative network aggregating entities and individuals in Portugal concerned with technology transfer, with a single major goal: Improving and accelerating the transformation of science and knowledge into economically valuable innovative solutions while addressing societal problems in a global context. Such a network is being built, with UTEN support, on increasingly larger and more effective knowledge-producing nodes (laboratories, university research groups, tech-based companies) and on emergent, still fragile, delivery links created through the technology transfer offices and professionals associated with those labs and universities.

Because these links have been created to interconnect the knowledge-*producing* nodes, they have trouble in effectively connecting with the knowledge-*consuming* nodes (the end-user companies and other licensees aiming at transforming and/or selling technology and technology-based products and services). This difficulty in effectively connecting to potential clients is the "last mile problem" of the technology transfer network.

Increasing opportunities for science and technology within increasingly globalized and specialized markets bring new challenges and opportunities to international technology transfer and commercialization. UTEN works with national and international partners to leverage existing professional technology transfer and commercialization know-how, to generate new knowledge for successful S&T commercialization, and to promote Portuguese economic development in the global economy.

## 1.7 UTEN Members

### *Inception*

The University Technology Enterprise Network (UTEN) was initially conceived and structured by the IC<sup>2</sup> Institute, The University of Texas at Austin, working with Ministry of Science, Technology and Higher Education and the Portuguese Science and Technology Foundation (FCT). This effort was based on a six month assessment of how best to leverage key science and technology commercialization know-how and capabilities of the IC<sup>2</sup> Institute and its partners with key needs and challenges of Portugal. The five-year cooperative agreement was signed in March 2007.

It was understood that this initial agreement was inclusive and challenging in that it included 15 Portuguese universities and select technology parks and research centers. The agreed upon main objective of UTEN continues to be to build a globally competitive and sustainable science and technology (S&T) transfer and commercialization network and infrastructure within Portugal. Initial clear challenges involve strengthening existing Portuguese regional and national technology transfer (TT) academic-science-business cooperative networks and abilities in order to achieve needed critical competencies of required expertise to successfully take the best Portuguese S&T and entrepreneurial capabilities to commercial applications and international markets.

### *Fundação para a Ciência e a Tecnologia (FCT)*

FCT started operations in August 1997 following Junta Nacional de Investigação Científica e Tecnológica (JNICT). FCT's mission is to:

- Continuously promote the advancement of scientific and technological knowledge in Portugal,
- Explore opportunities that become available in any scientific or technological domain to attain the highest international standards in the creation of knowledge, and
- To stimulate knowledge diffusion and contributions to improving education, health, the environment, quality of life, and well-being of the general public.

FCT promotes, finances, follows and evaluates science and technology institutions, programs, projects; establishes qualifications of human resources; promotes

and supports infra-structures for scientific research and technological development; promotes the diffusion of scientific and technological culture and knowledge especially when relevant for educational purposes in close collaboration with the agency Ciência Viva. FCT also stimulates the update, interconnection, and reinforcement and availability of science and technology information sources. Science and technology are considered in a wide sense including natural and health sciences, engineering, social sciences and the humanities.

### *The IC<sup>2</sup> Institute*

The IC<sup>2</sup> Institute of The University of Texas at Austin has a 35 year track-record of working with emerging, developing, and developed regions worldwide to effectively structure industry-science-academic relationships to transfer and commercialize innovative and creative knowledge/technology to build wealth and high quality jobs while providing for a sustainable quality of life. Austin, Texas, is known internationally for leveraging crucial academic, business, and government collaboration to transform a mid-sized central Texas government and university town into a globally competitive technology region that successfully educates, attracts, and retains scientific and entrepreneurial talent from leading technology regions in the United States and worldwide.

Theories and hypotheses developed at the Institute regarding commercialization and technology-based economic impact during the Austin experience are tested in life-scale through several programs: the Austin Technology Incubator (ATI), one of the world's most prominent business incubators, the Bureau of Business Research (BBR), providing Texas leaders with research data to strengthen the state's economy, and the Global Commercialization Group (GCG), catalyzing growth in emerging knowledge-based economies throughout the world.

### *Academic Partnerships*

Science and Technology advancement in Portugal has been accompanied by a process of international growth in academic institutions, specifically stimulated through strategic alliances with institutions of great international significance. *The UT Austin | Portugal International Collaboratory for Emerging Technologies*, or *CoLab* has been established with The University of Texas at Austin.<sup>1</sup> Other major initiatives include the *MIT | Portugal* program in Engineering Systems, with the Massachusetts Institute of Technology, the *CMU | Portugal* program with the Information and Communication Technologies Institute, ICTI, at Carnegie Mellon University, the *Harvard Medical School | Portugal* program in Translational Research and Information, and the establishment of *Fraunhofer Research Portugal*, through FhP AICOS, the Research Center for Assistive Information and Communication Solutions.<sup>2</sup>

<sup>1</sup> [www.utaustinportugal.org](http://www.utaustinportugal.org)

<sup>2</sup> [www.mitportugal.org](http://www.mitportugal.org); [www.cmu.edu/portugal](http://www.cmu.edu/portugal), [www.hmsportugal.org](http://www.hmsportugal.org), [www.fraunhofer.pt](http://www.fraunhofer.pt).

At the same time, science and technology based entrepreneurship is increasingly seen as a key element of Portugal's ability to grow and prosper. Research universities have worked to foster a range of technology transfer and commercialization activities and offices, together with industrial liaison programs, mostly devoted to fostering entrepreneurial environments and launching of technology based start-ups, bringing ideas to the market. UTEN promotes this movement, focuses on stimulating new competencies in international technology transfer and commercialization, and facilitates access to leading markets worldwide.

**MIT Portugal.** The MIT|Portugal Program is an international collaboration seeking to demonstrate that an investment in science, technology and higher education can have a positive, lasting impact on the economy by addressing key societal issues through quality education and research in the emerging field of engineering systems. The program has targeted bioengineering systems, engineering design and advanced manufacturing, sustainable energy systems, and transportation systems and as key areas for economic development and societal impact.

**Carnegie Mellon Portugal.** The intellectual focus and theme of the Carnegie Mellon|Portugal partnership is information and communication technologies, broken out into four broad areas: *Information processing and networking*, which includes information networking, software engineering, information security, language technology, and critical infrastructure. *Sensing technologies & networking* includes distributed inference, and risk assessment & management. *Technology, management & policy* includes technical change & innovation, engineering and public policy for network and software industries. *Basic sciences* includes applied mathematics.

**Fraunhofer Portugal.** Fraunhofer Portugal was created to drive the collaboration framework and to establish a new institute in Portugal – FhP AICOS the Research Center for Assistive Information and Communication Solutions. Additional focus areas identified include biotechnology, nanotechnology, advanced manufacturing and logistics. Ultimately, this collaboration will promote continuous and systematic cooperative actions between Fraunhofer Institutes, R&D institutions in Portugal and our customers.

## **1.8 Program Development: 2007-2008**

### *Highlights*

- Relationship and network building
  - » Working with the willing
  - » UTEN-sponsored awareness-building visits to Portugal and Texas
- Building Portugal S&T database
  - » Meeting university TTOs, researchers, and entrepreneurs
  - » S&T portfolio assessments at select Portuguese universities





Creative industries such as film and music are highly linked to high technology sectors and regions. In 2011, a UTEN workshop on Intellectual Property protection was presented to the *FuturePlaces* art festival audience in Porto. *FuturePlaces* was initiated within the auspices of the larger UT Austin | Portugal CoLab's *Digital Media* program.

- » RapidScreens and MarketLooks
- » Pilot “learning by doing” for S&T internationalization
- Building Texas UTEN Partners Network
  - » UT Austin Technology Incubator (ATI)
  - » UT Austin Office of Technology Commercialization (OTC)
  - » UT Dallas OTC
  - » Texas A&M OTC, College Station, Texas
  - » South Texas Technology Management (STTM), San Antonio, Texas
  - » INCELL (biosciences), San Antonio, Texas

In 2007, UTEN initial activities included a six-month assessment of how to best leverage key science and technology commercialization know-how and capabilities of the IC<sup>2</sup> Institute and its partners with key needs and challenges of Portugal. Based on this study, UTEN chose to focus on three main action lines to grow and strengthen UTEN Portugal with sustainable partnerships with key international institutions:

1. *Networking and specialized training:* specialized national and regional workshops in International Technology Transfer (TT) to deepen Portugal’s understanding of S&T based TT and commercialization, by learning from case studies and building on the experience of leading institutions worldwide.
2. *On-the-job Practice and Training:* value-added S&T transfer and commercialization training through International Internships and In-Situ training:
  - » *International Internships:* FCT supported International Internships competitively offered to Portuguese Technology Transfer managers and staff, allowing for two to three months working and training

engagements with UTEN’s International Partners.

- » *Business Development and Training:* for selected TTOs and researchers on assessing the business potential of technologies from their own institutions, focusing international markets. Action will also focus on identifying and securing international lead collaborators (entrepreneurs, research partners).
  - » *In-Situ Mentoring:* In-situation, in-depth training and mentoring is considered a capstone initiative provided on location at Portuguese Technology Transfer Offices (TTOs) that have successfully progressed through UTEN training programs.
3. *Observation and Assessment:* continuous support for the professionalization of Portuguese TTOs by (annually) collecting information, building metrics and conducting observation and assessment on TT practices and results for wide public dissemination and publication in an Annual UTEN Portugal Report encompassing survey data, metrics and targeted case studies.

Following the development of this basic strategy, a series of exchange meetings were planned bringing together experts from UTEN Austin and Portugal to develop mutual understanding around key topics which will facilitate technology transfer and commercialization in Portugal. A vital component of the UTEN program is personal interchange among participants, with emphasis on the relations built among Portuguese experts in science and technology commercialization and their international colleagues. A detailed description of UTEN network activities is available in the COLAB Square Newsletter ([www.utaustinportugal.org](http://www.utaustinportugal.org)), which provides monthly updates on activities and opportunities within the UT Austin|Portugal International Collaboratory for Emerging Technologies (CoLab) program.

### *April 2008 UTEN Portugal visits Texas*

April 7-11, 2008 UTEN Austin received the following visitors representing UTEN Portugal: José Mendonça, UTEN Portugal Director and Professor, University of Porto and President, INESC Porto; Maria Oliveira, University of Porto; Maria José Francisco, Instituto Superior Técnico, Lisbon; and Ana Paula Amorim, TecMinho, University of Minho. Also included in the visit were Marco Bravo, Ministry of Science, Technology, and Higher Education; and Pedro Madeira, Executive Director, CoLab Portugal. Topics for UTEN Planning Sessions included discussions of Portugal's S&T commercialization challenges and concerns, especially with regards to being successful in the U.S. market. During these visits UTEN Portugal guests met with faculty and business professional experts that work with UTEN Austin to provide advice, mentoring, internships, and U.S. networking opportunities concerning such issues as U.S.-Portugal technology marketing, university-industry partnerships in technology commercialization, bootstrapping and Business Angel Funding, technology valorization and business development, and technology forecasting. Discussions also focused on (1) developing value-added internship positions for select Portuguese tech transfer managers and staff from universities, incubators, and research parks, and (2) business development opportunities for select Portuguese entrepreneurs and start-up companies.

### *June 2008 UTEN Austin visits Portugal*

From June 16 to June 20, 2008 a biotechnology and medical technology expert team representing UTEN Austin visited with entrepreneurs, universities, incubators, research parks, and other institutions throughout Portugal. The UTEN Austin team included: Dr. Mary Pat Moyer, founder, CEO and Chief Science Officer of INCELL Corporation ([www.incell.com](http://www.incell.com)); James Janowiak, President and founder, TEKSA Innovations; Renee White, President, Caduceus Technology Partners ([www.caduceustechnology.com](http://www.caduceustechnology.com)); and Cliff Zintgraff, UTEN UT-Austin Program Manager. Visits were made to Lisbon, Oeiras, Coimbra, Porto, Maia, and Guimarães, hosted by: Taguspark; the itechpartner MedTech Conference, Coimbra; UPIN University of Porto; TecMinho University of Minho; and Instituto Superior Técnico.

### *September 2008 TTO training*

Jorge Gonçalves, Vice Rector, and Fátima Ramalho, Technology Transfer Officer, of the University of Porto visited Texas in September 2009 primarily to study biotech incubation at Incell Corporation and TEKSA.<sup>3</sup> While in Austin and San Antonio they also explored opportunities for developing projects through international funding resources and partnering with U.S. organizations.

### *October 2008 UTEN Austin visits Portugal*

In October, the UTEN Austin team consisting of David Gibson, Director; Cliff Zintgraff, Program Manager;

<sup>3</sup> [www.incell.com](http://www.incell.com)

and Prentiss Riddle, UTEN CoLab Liaison, visited with Maria José Francisco, Instituto Superior Técnico (IST); Maria Oliveira and Fátima Ramalho, UPIN, University of Porto; and Clara Gonçalves, UPTEC, University of Porto. In Lisbon, visits included entrepreneurs from CarCrash, Albatroz, OpenCell, Wizi, Bioalvo, Maeil Consulting, Alfama, and vectrLab. In Porto, UTEN visited Fluidinova, MOG Solutions, Ideia.M, EWEN, Bluemater, and Tomorrow Options.

### *December 2008 Portuguese TTO managers visit Austin*

From December 8 to 19, UTEN Austin hosted the following TTO managers from technology transfer offices, incubators and intellectual property units from Portugal, including University of Évora; University of Porto; Taguspark; INPI; IPN Incubator; and University of Aveiro. The objective of the visit was to further the strategy for the creation of a sustainable technology transfer system in Portugal through network building.

## **1.9 Program Growth: 2008-2009**

### *Highlights*

- Nine international workshops
- Two international conferences
- Twenty-three international internships
  - » 2 two-week intensive workshop training programs at IC<sup>2</sup> Institute
  - » International intern hosts: UTEN Austin (15); Fraunhofer (1); European Space Administration (1); Carnegie Mellon University (4); Boston University (1) First UTEN Annual Report, 2008-2009
  - » Continued training and network building activities Portfolio assessments at select universities; meeting university TTOs, researchers, and entrepreneurs; building Portugal's S&T database; "learning by doing" S&T international commercialization

### *UTEN Workshops 2009*

The UTEN Specialized Workshops in International Technology Transfer focus on broad main topics including industry-science relations, intellectual property management, and technology transfer and commercialization to:

- Deepen understanding of university-based technology transfer and commercialization across countries and world regions
- Initiate discussion and learning from specific case studies in Portugal and selected leading institutions worldwide.

Both Portuguese and international cases are presented and discussed with the goal to strengthen UTEN to:

- Facilitate, lead, and accelerate the commercialization of Portuguese S&T
- Foster international joint ventures in science and technology
- Initiate related economic activities that identify and explore emerging markets.

The participation of experts from leading worldwide institutions is catalytic as they provide specific examples,



share case studies, and act as a sounding board to Portuguese participants including:

- University and industry leaders from large companies, SMEs, and start-ups
- Technology transfer officers and other professionals engaged in technology transfer
- Researchers and post-grad students involved in science and technology commercialization.

An important UTEN component is the training of technology transfer officers and managers. U.S. training programs and internships in the United States are established in order to help trainees:

- Increase understanding of technology transfer processes, especially in a university setting
- Increase understanding of patent licensing processes
- Establish strong professional networks both in the U.S. and across Portugal
- Observe U.S. perspectives and best practices.

During spring 2009, Portuguese TTOs and related professionals countrywide were encouraged to submit applications to the FCT to be considered for FCT-sponsored UTEN training and internships in the United States. These applications were reviewed by an international committee composed of the UTEN Directors in Portugal (José Mendonça) and Austin (David Gibson), and UTEN managers and staff from both Portugal and Austin. The objective was to select a group of Portuguese technology transfer and commercialization managers and staff that would benefit most from participating in ongoing training programs and targeted internships. The objective is to increase the international professional competence of Portuguese TT managers and staff – and to build a strong core for a globally competitive and sustainable TT and commercialization network in Portugal. Twelve internships were initiated in May 2009 at the IC<sup>2</sup> Institute, The University of Texas at Austin. Each intern brought to the program a technology portfolio of one or more technologies for development through the training process. The program began with an initial two-week training phase targeted to provide the tools to develop and adequately pursue an individualized internship plan, including development of the technology portfolio.

UTEN also analyzed the technology-based companies created in Portugal in recent years as spin-offs of the sciences system are considered as one of the main structural changes of the national economy, with about 70% of the new companies operating in sectors of high-technology industry and services. These companies, created from R&D activities, are also a strong contribution for the growth of business sector R&D, as realized since 2005. Empirical research indicates that only a relatively small number of fast-growing new firms account for the lion's share of job creation, while most new firms are born small and remain small during their (usually short) life spans. While most fast growing firms are not in high tech sectors, they fit the category of knowledge-based

firms (i.e. high and medium tech manufacturing, and knowledge-based services). Nurturing opportunity-based, entrepreneurship in knowledge-based industries is crucial for the Portuguese economy. The analysis was conducted and reported in three parts, namely:

- Early-stage technology-based start-ups in Portugal with relevant university/research links, with emphasis for those formed in the last two to five years
- Mature technology-based start-ups in Portugal with relevant university/research links, with emphasis for those created more than five years ago
- Main technologies in commercialization by early-stage and mature technology-based start-ups in Portugal.

UTEN provided investigative work in collaboration with researchers in Portugal investigated several important areas relevant to technology transfer and entrepreneurship in Portugal in original studies, including:

1. Understanding the extent and value of intellectual property filings in Portugal
2. Human capital and entrepreneurial activity in Portugal
3. Knowledge creation and entrepreneurial activities in Portugal
4. Knowledge management and innovation: Firm-level evidence from Portugal
5. Impact of entrepreneurship on careers and earnings.

## 1.10 Increasing Capacity: 2009-2010

### Highlights

- Seven international workshops focusing on technology sectors: *Technology transfer @ Cambridge University; Experiencing Technology Transfer: Collaborating with Carnegie Mellon; Commercialization & Technology Transfer in Communication Security & Information Networking; Marine & Bioscience; Nanotechnology Research & Valorization; Regenerative Medicine & Novel Medical Therapies*
- Six regional training weeks for in-depth training: *Licensing and Negotiation; Capital Sourcing; Venture Creation; Technology Business Incubation; International Liaison Office Management; Patent Portfolio Strategic Management*
- International internships, second phase UTEN Austin, Carnegie Mellon University, Cambridge Enterprise
- Second UTEN National Conference, Lisbon
  - » Second UTEN Annual Report
  - » First TTO Survey
  - » First University Technology Business Spin-off Survey
  - » Portuguese case studies on internationalization
- Pilot in-situ training: *TecMinho, UNL*





Participants in a UTEN Training Week session perform hands-on tasks to help integrate learning to their daily work processes (2011).

- Pilot Soft-landing: *University of Texas and Texas A&M Incubators*
- Continued training and network building activities: *Portfolio assessments at select universities; meeting university TTOs, researchers, and entrepreneurs; building Portugal's S&T database; "learning by doing" for S&T international commercialization*

### Focus for Program

*International Internships.* Year 5 internships will focus more on licensing and on-shoring of Portuguese technologies including achieving successful licensing deals and softlanding of Portuguese S&T spin-offs with:

- Connect-US, which will emphasize international TT training and U.S. networking of Portuguese TTOs
- Technology bundling, cross licensing, and other international partnering activities.

*Training Weeks.* Based on Portuguese TTO feedback, select training weeks in Year 5 will focus on industrial liaison programs and procedures to improve Portuguese university and industry research collaboration leading to S&T commercialization and on-shoring of Portuguese S&T in U.S. markets.

*In-situ Training.* In situation training will be customized to the particular needs of TTOs already identified from UTEN past activities. UTEN Portuguese TT managers and staff will be invited to participate as "experts" in this training and to transfer their know-how and experience.

*International Workshops.* The focus will continue to be the identification of important emerging technology sectors in Portugal with emphasis on increased industry involvement and Portuguese university organization and management of these events. An important UTEN goal is for the national workshops to continue the

theme of technology transfer and commercialization with industry involvement.

*TTOs Leaders Meetings.* This activity will allow roundtables with invited international experts to deepen work surrounding real cases, specified and discussed by Portuguese leaders in the area of TT and commercialization.

### Workshops and Conferences

Table 1.1 (page 6) shows a comprehensive list of UTEN workshops and conferences to date. These events provide hands-on training, cutting edge information and networking opportunities across the country. UTEN Training Weeks and International Workshops are designed to enhance Portuguese TTO managers and staff capabilities for technology transfer and commercialization, as participants:

- Deepen understanding of science and technology transfer and commercialization through case studies that build on the experience of leading institutions worldwide
- Foster working relationships, share tools and perspectives, and examine key challenges and issues facing key Portuguese stakeholders
- Contribute to a sustainable, critical mass of professional technology transfer talent to facilitate globally competitive technology commercialization
- Understand and access UTEN activities and networks ranging from international internships to on-the-job training.

Organized with the FCT, both types of events involve international experts from public and private organizations as well as select representatives from Portugal's international partners including The University of Texas at Austin, Carnegie Mellon University, Massachusetts Institute of Technology, the Fraunhofer Institute, Cambridge University, General

Electric, and other world-class collaborators. From September 2009 through September 2010, UTEN conducted five training weeks and four international workshops (with attendance) as follows:

- Training Weeks
  - » Licensing & Negotiation (33)
  - » Capital Sourcing (32)
  - » Technology Venturing & Spin-offs (23)
  - » University-Based Technology Business Incubation (20)
  - » Industrial Liaison Office Management (22)
- International Workshops
  - » Technology Transfer @ Cambridge University (28)
  - » Experiencing Technology Transfer: Collaborating with Carnegie Mellon (22)
  - » Commercialization & TT in Communications Security and Information Networking (25)
  - » Marine & Biosciences: International Research Collaboration & Network Building for Commercialization (32)

### *UTEN International Internship Program*

The vision of this program was to set-up a national platform of high-level professionals in S&T commercialization and technology transfer, building on the existing network of TTOs and university incubators in Portugal. The main objectives of the UTEN International Internship Program are twofold:

- Acquire international S&T transfer and commercialization knowledge, skills, and know-how from expert mentors and their host institutions (by providing opportunities for real world observation and practice in international technology licensing and venture formation)
- Support commercialization and on-shoring for Portuguese technologies and academic spin-offs.

This program is expected to help TTOs and University incubators to:

- Enhance understanding and exposure to new models for successful TT and commercialization for identification of “Best Practices” which could be adapted and deployed in Portugal
- Develop sustainable international institutional and industry linkages for Portuguese TTOs and their universities including professional connections and network building for off-shoring Portuguese S&T.

A total of 13 interns were placed in the United States. Twelve rated the experience as highly valuable, as they worked in U.S. TTO and incubator environments to:

- Network with staff at their host organizations
- Learn about technology business activities in the United States
- Learn about advanced TT and commercialization tools and procedures
- Observe and participate in tasks of the host organization
- Assess market and commercialization

opportunities for specific Portuguese technologies.

### *Technology to Market Assessment Training*

The Institute has developed methodologies that have proven valuable to assess the proximity of a technology to a definable market opportunity. UTEN sought to transfer these methodologies to interns using actual technologies from Portugal as living case studies. This use of “living cases” also helps UTEN Austin implement training processes at a grass roots level, while building positive relationships and trust with TTOs. It also promotes UTEN’s interest beyond generic training, toward the larger goal of making an overall impact on Portuguese technology transfer and commercialization activities. This training has been grounded in three key methodologies:

- *RapidScreen*. This assessment consists of a four-to eight-hour review of the technology, the technology team and institution, and the market, against seven categories of readiness (Figure 1). The goal is to identify technologies most ready to commercialize, according to market viability and the readiness of inventors, technology transfer offices, and the technology.
- *MarketLook*. This 40- to 60-hour assessment helps determine the “voice of the market” so that the TTO can work with the inventor to negotiate a license, form a spin-off, accelerate needed additional research, assess development and sales collaborations, and/or address shortcomings that are barriers to market acceptance. MarketLook uses primary interviews (phone calls, in-person interviews, and email exchange) with potential customers, end users, partners, competitors, and other experts in the technology’s target markets. UTEN has worked with Portuguese technology transfer office staff to conduct U.S.-based expert interviews and develop 8-10 page MarketLook reports on Portuguese technologies.
- *Additional Coaching and Mentoring*. Both the RapidScreen and MarketLook methodologies help clarify technology challenges and market opportunities. UTEN Austin works further with Portuguese TTOs and entrepreneurs on international market outreach and business development with a focus on transferring knowledge and practice to the Portuguese participants, and particularly on identifying and pursuing new opportunities as they arise.
- *TechPortugal.com*. As part of the technology assessment process, UTEN@Austin has developed a portfolio for promoting technology within Portugal and globally. The portfolio, whose development is still in progress, can be found at [www.techportugal.com](http://www.techportugal.com). It contains over 140 technologies identified as part of UTEN@Austin efforts. It is being used to cross-match with U.S.-based technology organizations.



## *In-Situation in Practice*

Based on an increased awareness of the challenges of transferring extensive know-how back to Portuguese TTOs, the first UTEN in-situation training was piloted as a one-week program at TecMinho and the New University of Lisbon. A detailed schedule of meetings and project planning sessions was produced in advance to get direct input for in-country staff as well as to familiarize the office as a whole on UTEN trainings and competencies. UTEN experts worked directly with in-country trainees in each institution over the course of one week and interfaced with other staff in the office as necessary and appropriate. A typical schedule of training sessions were as follows:

- *Day 1:* Meeting with in-country departments/planning sessions
- *Day 2:* Clearing the in-country IP portfolio working session/Analysis of TTO technology intake process
- *Day 3:* Designing and developing an updated technology intake process and creation of associated forms and support materials
- *Day 4:* Project management integration of materials and process, IP integration strategy session
- *Day 5:* New TTO process for intake, evaluation, and assessment presented to management.

Key learnings were compiled and shared among participants and the UTEN network. Some interns pursuing their second internships in Texas dug deeper with both mentors and industry contacts with whom they had already established foundational relationships and to further develop professional contacts in the region and business relationships for leading technologies emerging from their universities. UTEN reports detail approximately ten examples where significant traction in the U.S. market conversations were accomplished through these interactions.

## *Survey of Technology Transfer Offices*

In 2010 the first annual UTEN network survey of technology transfer offices was conducted to obtain a more comprehensive view of technology transfer activities in Portugal. The survey results presented here are based on responses from eleven Portuguese technology transfer offices. Key findings follow.

### *Organization and Budget*

- *Maturity of TTOs.* Many of the TTOs have been established only recently. Only one TTO is at least a decade old, while another was created in 2001. The others are more recent, having been established in 2003 or later, including one in 2009 and another in 2010.
- *Employee Duties.* The number of full-time technical/professional employees ranges from one to nine per office. A total of 49 technical/professional employees work in the offices of the TTOs that responded. Across the responding

TTOs, on average employees divide their time among several key functions:

### *TTO Employees Primary Functions (Average 11 TTOs)*

- *Expenditures.* Resources vary considerably across the TTOs. In 2009, expenditures ranged from approximately €50,000 at one TTO to more than €200,000 at other TTOs. The total resources expended in 2009 by the TTOs were approximately €2,652,000.
- *Sources of Revenues.* As with expenditures, there is variation in the sources of revenues. In 2009, five of the eleven TTOs received no funding from their institutions, and three others received 25% or less of their revenues from their institutions.

### *Intellectual Property and Commercialization*

- *Royalties.* While the university receives 100% of royalties at two institutions, eight TTOs report that royalties are split between their institutions and the inventors in varying proportions, usually 50%-50% or 40%-60%.
- *Invention Disclosures.* There is a clear trend of increasing invention disclosures by the TTOs.
- *Licenses, Option Agreements, and Assignments.* Nearly all of the licenses, agreements, and assignments have been executed with Portuguese partners. The number has increased over the past three years.
- *R&D Agreements.* The TTOs reported they executed some 240 R&D agreements in 2009, up substantially from both of the prior years.

Further, quantitative assessments of technology transfer and commercialization activities in Portugal were conducted. The UTEN reports details of impressive accomplishments of Portugal TTO organizations as well as the activities of Portuguese academic spin-offs and their economic impact.

## *ISCTE-MIT, A New International Competition*

Within the scope of the MIT Portugal Innovation & Entrepreneurship initiative (MPP-IEI), this international venture competition, launched at the end of the first Quarter of 2010, is the result of a comprehensive research based on the existing entrepreneurship programs and business plan competitions in Portugal and the U.S. This new program was named ISCTE-IUL MIT|Portugal Venture Competition and aims at providing unique support while it spotlights new ventures and teams with emerging technologies that may have considerable economic impact on the Portuguese economy and international growth prospects. The emphasis of the competition is to focus and educate select teams on Go-to-market optimum practices and leverage seasoned volunteers' (catalyst) experience and access to an international marketplace. The unique features to the ISCTE-IUL MIT|Portugal Venture Competition can be attributed on the one hand to over 20 years of the MIT100k accumulated experience, and on the other to bottom-up research carried out with 1) CEO's of recent

Portuguese tech start-ups, 2) existing competition finalists and 3) seasoned investors & entrepreneurs with investment incentives.

Nineteen finalists pitched their projects at the final ceremony, on September 30, in a ceremony attended by the Secretary of State for Science, Technology and Higher Education, Manuel Heitor. The four best projects—one in each track—were selected by an independent jury: PLUX (Life Sciences), Waynergy (Sustainable Energy & Transportation Systems), BIPS (IT & Web), and Weadapt (Other Products and Services), who were each awarded a prize of €100,000.

## 1.11 Pursuing Excellence 2010-2011

### Highlights

- Six international internships: *UT Austin (3); MIT (1); Carnegie Mellon University (2); University of Southern California (1) Boston University (1)* (Note: One intern was hosted by both UT Austin and MIT.)
- One reverse internship, pilot program – *UT Austin to TecMinho, U.Minho*
- Four thematic workshops: *Development of Social Entrepreneurial Ventures, Commercialization of space Technologies, Research Collaboration & Network Building for Commercialization: Nanotechnology and Life Sciences, Technology Transfer Within Creative Industries, Arts, and Humanities.*
- Three training weeks: *Patent Portfolio Strategic Management; Evaluation of Intangible Assets; and From Lab to Market: Deep Analysis of Real Cases.*
- Six initiation brainstorming sessions with students, *Pilot: Entrepreneurship Day @ AAMinho, AAUTAD, AACCoimbra, IST, FAP, Clube Enova, UNL.*
- Three leaders roundtables, pilot program: *Benchmarking Best Practices on Managing Technology Incubators, Benchmarking Best Practices in Managing an Effective TTO, and Benchmarking Best Practices in International S&T Commercialization.*

- Third UTEN national conference
- Second ISCTE-IUL MIT | Portugal ventures competition
- US Connect for International Business Development, pilot program developed with The University of Texas at Austin
- Entrepreneur in Residence, pilot program developed with Carnegie Mellon University
- Observation and Assessment
  - » Third UTEN Annual Report
  - » Second TTO Survey
  - » Second University Academic Spin-off (ASO) Survey
  - » Technology Transfer Offices in Universities: Emerging Challenges
- UTEN institution building: *Formation of UTEN General Assembly, Scientific Director and Executive Committee; Coordination Office and Secretariat; International Advisory Board; and continuation of External Review Committee*

Since its inception, UTEN programs and activities have catalyzed sustainable, value-added partnerships and networks with key international partners while continually enlarging its network within Portugal by:

- Adding new Portuguese institutional partners
- Expanding its programs to new audiences within these institutions
- Training an increasing number of TTOs.

Established, creative learning mechanisms have focused on capacity building through innovative technology transfer practices, related know-how, commercialization skills, and the development of both formal and informal international networks. UTEN programs and activities include International Internships, Specialized Training and Networking, Technology Commercialization, Observation and Assessment, and Institutional Building. A brief summary of these follows, while the balance of this report describes UTEN's 2011 progress against these action lines.

Joel Serface delivers a keynote to the BGI Venture Competition 2012. The competition is gaining in the number of overall entries, as well as in international participation and notariety.





## *International Internships & On-the-Job Training*

UTEN has organized FCT-sponsored international internships (both short- and medium-term) to mentor Portuguese professionals and researchers as they simultaneously work on Portuguese technology portfolios for licensing and on-shoring in international markets. Key objectives include securing successful licensing deals and "soft landing" S&T spin-offs (enabling technology bundling, cross licensing, and other international partnering activities). UTEN also welcomes foreign TTOs to intern at Portuguese institutions. UTEN initially hosted interns throughout the state of Texas and has added U.S. internship opportunities at Carnegie Mellon University, Massachusetts Institute of Technology, Boston University, and the University of Southern California. In Europe, some interns were placed with the Fraunhofer Institute, the European Space Agency (ESA) and Cambridge Enterprise. Subprograms of the UTEN International Internship Program include:

- *Train-the-Trainer*: Prepares senior Portuguese TT managers and staff to train emerging TTO managers and staff throughout Portugal to identify and integrate best practices and training resources, develop training material and generally enlarge their capacity to train others.
- *Reverse Internships*: Placing an international technology transfer agent in a Portuguese TTO to explore partnering opportunities across international boundaries. As a pilot case, Rosemary French, with the Office of Technology Commercialization (OTC) at UT Austin worked at TecMinho for three months.
- *CoLab's Advanced Digital Media program (ADM)*: UTEN helps facilitate company internships for CoLab's ADM program and also provides TT know-how for ADM FCT funded researchers).

## *Specialized Training and Networking*

In addition to receiving excellent in-depth training, professional networking is an important value-add of international workshops, training weeks, in-situ training, leader's roundtables, and initiation brainstorm, which are implemented in close collaboration with Portuguese industry experts and UTEN partners.

*International workshops*: While UTEN continues to offer S&T commercialization support as in previous years, in 2011 UTEN has increased company interaction and placed new focus on TT specialization in emerging technology sectors.

*Training weeks* emphasize case studies and industrial liaison (ILO) programs and the development of procedures to improve Portuguese university and industry research collaborations that lead to S&T commercialization and on-shoring of Portuguese S&T in international markets. Training weeks typically consist of an intense two-day workshop followed by face-to-face meetings with invited experts.

*In-situation (in-situ) training*: Applicant Portuguese TTOs present a specific strategic or operational need; a UTEN

program manager then provides on-site training for an extended stay (usually about one week) to incorporate customized S&T transfer and commercialization training to meet the particular needs of the TTO. UTEN mentors help transfer deep know-how, tacit knowledge, and hands-on experience across the entire office. Topics include internal TTO organization, best practices, and ILO strategies. While exercising care to protect confidentiality as needed, in-situ training results are often disseminated to other TTOs.

*Leaders roundtables* provide a platform for Portuguese TTOs – together with leaders of associated laboratories and incubators, rectors, and vice rectors – to address specific issues, problems, and challenges faced in accelerating technology transfer and commercialization. International experts help examine institutional development, TTO organization and procedures, and adaptation of United States university methodologies to develop ILO relationships with industry. Each roundtable has a moderator and a rapporteur, to monitor and write up the main conclusions of these high-level discussions.

*Initiation brainstorm*s increase awareness and excitement for both graduate and undergraduate students regarding technology-based entrepreneurship and the creation of new ventures. Initiated in 2011, these sessions expand the UTEN program to connect a new core university audience: graduate and undergraduate students. Promoted and organized in close cooperation with Portuguese university student unions and other student initiatives, the goal is to foster an entrepreneurial ecosystem across the university and across Portugal.

## *UIDP Visit to California*

In April 2011, a UTEN/Portuguese delegation of Vice-Rectors, technology transfer officers, and UTEN staff participated in a University Industry Demonstration Partnership (UIDP) meeting at Pfizer World R&D Headquarters in La Jolla, California in April, 2011. UIDP is an initiative of the United States National Academy of Sciences, designed to facilitate active collaborations between universities and industry. The UTEN delegation also attended a number of exclusive meetings and events with consultants, industry representatives, United States government agencies, and universities interested in exploring international partnerships and collaborations.

## *Technology Commercialization: Fostering New Int'l Business Development*

*ISCTE-MIT Technology Ventures Competitions*: UTEN worked closely with ISCTE-MIT and other entities to develop and promote venture competitions across Portuguese universities and to foster the development of successful science- and technology-based ventures.

*US Connect for International Business (Pilot Program)*: In close collaboration with Portuguese TTOs and other international UTEN partners, this pilot program with the IC<sup>2</sup> Institute at The University of Texas at Austin identified university-based startups and technology ventures that possessed high capability for international

# UTEN Portugal

## University Technology Enterprise Network



Everyone wore a smile when intern presentations were complete in Austin, Texas (2009). Back row, left to right: Isabel Alta de Veiga, Miguel Moura, David Gibson, Darius Mahdjoubi, Jonathan Singh, Cliff Zintgraff, Elaine Jones, Dina Chaves, and Laura Kilcrease. Front: Ana Rita Remígio, Marlos Silva, David Resende, Pedro Silva, Eli Mercer, Carla Mascarenhas, Marta Catarino, José Paulo Raino, and Maria José Francisco.

business success and worked with them to establish successful business startups, alliances, and relationships in the U.S. market.

*Entrepreneurship in Residence (Pilot Program):* Carnegie Mellon University is launching EIR with the UTEN program to help Portuguese companies enter the U.S. market. EIR includes training, mentoring, and opportunities to meet with potential industry partners.

### *Reverse Internship Pilot Program*

Rosemary French participated in a three-month “Reverse Internship” pilot program at TecMinho, the TTO for the University of Minho in Guimarães, Portugal. There were three main objectives for Rosemary’s internship: to observe and recommend practices that might increase the success of TecMinho’s office, to promote Portugal technologies in the international market, and to strengthen the cooperation between U.Minho and The University of Texas at Austin.

### *The ISCTE-IUL MIT|Portugal Venture Competition*

The ISCTE-IUL MIT|Portugal Venture Competition is the largest technology-based entrepreneur’s competition in Portugal. This international venture competition launched last year as the result of comprehensive research based on the existing entrepreneurship programs and business plan competitions in Portugal and the United States. In the first two years, more than 160 teams have entered the annual competition in which 20 teams emerge to pitch their ideas to a packed house of an

enthusiastic audience. Over half of the teams in the 2011 competition were technology-based startup companies. Across the four tracks of the competition, about 50% classify as Information Technology and the Internet, 20% as Products and Services, 18% as Life Sciences and 13% as Sustainable Energy and Transportation. This year’s competition strategy focused on identifying the most market-ready candidates.

**E-teams I Boot Camp Training:** Five semifinalists in each track were announced on June 30, 2011. The entrepreneurship teams (E-teams) were invited to a boot camp held at ISCTE-IUL from July 13 to 15, 2011. The boot camp was attended by 57 out of 81 team members, with representation from all 20 teams.

**E-teams II Boot Camp Training:** The four track finalists, four honorable mentions with four Go-to-Market wizards totaling 26 participants, were invited to attend a three-day workshop to further develop their Go-to-Market strategies. The purpose of E-teams II was to accelerate the rate of business development. This workshop examines the key challenges of the teams’ Go-to-Market plans, as input to an action-based learning approach to market introduction.

Despite a decrease in the number of submissions (95 in 2010 and 60 in 2011), the second year captured the interest of a larger number of more mature startups with stronger value propositions and stronger teams. In little over a year, the MPP-IEI has branded itself to key stakeholders, including top investors, as a must-



attend event. It has established itself as an engine for innovation and technology-based entrepreneurship, both nationally and internationally. This attracts innovators and technologists as they seek new opportunities in a global marketplace. This important initiative will continue to have a measurable impact in the creation of an entrepreneurial ecosystem in Portugal: fostering durable bonds with investors and business catalysts, while developing a strong Alumni network of entrepreneurs.

### *US Connect: Pilot Program*

#### *Business Development & Commercialization*

Essential tasks for any technology transfer professional are the promotion of licensable technologies, promotion of spin-off companies, and advancement of their related products and services. UTEN has continually provided a mix of portfolio review, technology analysis, and networking and business development services that was focused for training technology transfer managers and staff while providing material benefits to the technologies emerging from Portuguese institutions. Through most of the UTEN program, these efforts focused on upstream (early stage) research and emerging technologies. US Connect is a pilot UTEN initiative in which the IC<sup>2</sup> Institute works with startup entrepreneurs to focus on business development that will help them enter international and U.S. markets.

#### *US Connect: Stage One*

The US Connect application requires companies to document success in the Portuguese market and demonstrate potential for the U.S. market. Applicants are requested to demonstrate understanding of how their accomplishments to date can be strategically leveraged to achieve success in the U.S. marketplace. Companies are selected for US Connect Stage One and Two based against four weighted criteria:

- Revenue from products and services
- Prospective competitive advantage in the United States from those same products and services
- Commitment of CEO/executive staff to make a self-funded two-week visit to the United States during Phase Two; and resources to follow-through on trip results
- A strategic fit of the company with the IC<sup>2</sup> Institute's market making activities.

The goal of Stage One participants, 11 in all was to maximize the opportunity for positive outcomes in the U.S. market, UTEN Austin staff works with the management of these ventures to help a) identify potential customers and collaborators in the U.S. market, and b) improve and sharpen the marketing messages and other strategic needs. These companies receive UTEN and IC<sup>2</sup> Institute support to hear the voice of the market for their products and services.

#### *US Connect: Stage Two*

The goal of US Connect Stage Two is to conclude business deals involving contracts for sales, collaboration, or

further development as dictated by the market. To engage in Stage Two activities, the CEO's and staff are expected to spend up to two weeks in the United States performing business development activities with UTEN and IC<sup>2</sup> Institute staff. Companies are selected for Stage Two US Connect training against the following criteria:

- 30%: Number of potential customers, partners, or scientific collaborators
- 30%: Commitment for needed travel to the U.S., including financial resources
- 25%: Potential size of the prospective deals
- 15%: A strategic fit of the company with the IC<sup>2</sup> Institute's market making activities.

Five ventures have advanced to US Connect Stage Two to focus on in-depth business development for international markets. UTEN and IC<sup>2</sup> Institute staff will work with these managers to define a strategic plan for the entrepreneurial venture and execute market making activities including phone calls to experts, prospective clients or partners; in-person visits to sites (with related travel); sharpen existing pitches; assist with contracts and term sheets; and other activities that progress the venture toward deal closing. These five companies include Bioalvo, FeedZai, Innovapotek, Tecla Colorida, and WS-Energia.

### *Entrepreneurship in Residence at Carnegie Mellon University*

Carnegie Mellon University has launched the UTEN Entrepreneurship in Residence pilot program to help Portuguese companies enter the U.S. market. EIR will include training, mentoring, and provide opportunities for collaborating with potential industry partners.

Over a seven-month period, the EIR was broken down into three Phases. Phases I and II prepared the companies to develop pitches to potential investors and customers, provides information on topics such as knowing your market and competition, university relationships, differentiation and segmentation, and partnerships for development and distribution. Phase III consisted of the Portuguese companies traveling to Pittsburgh, PA to participate in a "Business Week" which allow them the opportunity to make their pitch to potential clients, customers and investors. Additionally, the Portuguese businesses paired with specific U.S. companies of interest to discuss potential business options as it related to sales, customers and investment.

### *UTEN Observation and Assessment*

UTEN's observation and assessment focus on:

- Continued observation of case studies as they emerge
- Dissemination of successful projects and ventures collection of metrics to help assess and improve the performance of technology transfer and commercialization across Portuguese institutions.

These efforts further the larger goal of the continued professionalization of Portuguese TT managers and staff. To this end UTEN conducts:

- In-depth program evaluations of international internships, international workshops, training weeks, in-situ training, and leaders roundtables
- Annual surveys of national TTOs, performed cooperatively with Portuguese and UT Austin researchers
- Annual surveys administered to all UTEN partner institutions to help monitor the challenges and best practices of technology transfer and commercialization in Portugal
- Case study development associated with Portuguese spin-offs and university startups.

This information is disseminated through UTEN's yearly reports, annual conferences, and web page. UTEN assessment of the Portuguese TTO and entrepreneurial start-up/spin-out environment indicates that the outcomes from the UTEN program (2007-2011) have been remarkable:

- Supporting the launch of more than 100 new technology-based companies and their support with regards to international market fit and business strategy;
- Driving >132% increase in academic start-up rate compared with pre-UTEN, where these young companies show more than 125% increase in revenue and 38% growth in hiring;
- Acceleration of five Portuguese companies businesses in the U.S. market through the US Connect pilot program resulting in several business, services and manufacturing deals, in-person meetings in more than a dozen Fortune 500 companies and a U.S. subsidiary for three companies.
- Successful networking of all major research institutions throughout the Portuguese mainland and associated islands;
- Development of a technology transfer office (TTO) infrastructure at all major nodes within the UTEN network;

- Delivery of more than 50 workshops hosting over than 1,500 participants providing broad training for in-country professionals and scientists addressing a variety of topics, including intellectual property management, technology transfer processes, technology commercialization and strategic management of technology assets;
- Intensive infrastructure investment in 12 TTO's from leading universities, providing intensive assessment, development and process improvement;
- Deep training of more than 30 TTO professionals who have interned in the United States receiving immersion training in best practices in technology transfer and commercialization;
- Extensive technology surveillance resulting in the capture of over than 150 new technologies in the form of inventions from Portuguese researchers, which is an almost 50% increase in disclosure rate compared to the pre-UTEN environment;
- Catalyzing an above than 1,900% increase in provisional patent filings and almost 20% increase in issued patents to Portuguese researchers;

These metrics demonstrate the success of the UTEN program, and the IC<sup>2</sup> Institute who managed it, with regards to practice and capacity building in the areas of technology strategy, transfer, commercialization and intellectual property management. The US Connect program further illustrates the surveillance abilities of the Institute to source technologies, evaluate and drive business outcomes for partners. The outcomes of the UTEN program as highly successful and indicative to:

- Capture leading scientific accomplishments as inventions
- Practice effective technology transfer in support of out-licensing and spin-out activities
- Develop human capital to support entrepreneurial activities
- Prepare Portuguese companies for international market expansion.

Brett Cornwell addresses the UTEN Intern group at the IC<sup>2</sup> Institute, The University of Texas at Austin (2009).







## 2. UTEN Activities 2011 - 2012

*“UTEN provided a source of formal knowledge on technology transfer and technology-based entrepreneurship through internships in the United States, as well as the many workshops organized with experts with a longer and richer experience than ours. It would never have been possible to prepare the people that currently work at INOVISA so well and so fast without this help.”*

Luís Mira  
President of INOVISA  
Vice President of ISA-UTL



## 2.1 UTEN International Internships

The UTEN International Internship Program was initiated by the FCT in 2009 and it has proved to be one of the most important UTEN initiatives through 2012. The main objective of this innovative program was to help build a globally competitive national platform of high-level Portuguese professionals in S&T commercialization and technology transfer and to enhance the existing national and international networks of Portuguese university-based TTOs, entrepreneurs, and technology incubators. Specific objectives were to:

1. Acquire international S&T transfer and commercialization knowledge, skills, and know-how from expert mentors and their host institutions by providing opportunities for real world observation and practice in international technology licensing and venture formation
2. Support commercialization and on-shoring for Portuguese technologies and academic spin-offs.
3. Enhance understanding and exposure to new models for successful TT and commercialization and for the identification of “Best Practices” which could be adapted and deployed in Portugal
4. Develop sustainable international and industry linkages for Portuguese TTOs and their universities including professional connections and network building for off-shoring Portuguese S&T.

During spring 2009, Portuguese TTOs and related professionals were encouraged to submit applications for FCT-sponsored UTEN International Internships. The selection of final candidates was based on individual relevant experience, home institution support, and the technology transfer projects they would bring to the intern process. Applications were reviewed by an international committee composed of UTEN directors, managers, and staff, from both Portugal and Austin.

Twenty-two International Interns were selected in 2009 and 12 members of this initial cohort launched the International Internship Program in May by participating in an intensive two-week training course conducted by international experts at the IC<sup>2</sup> Institute, The University of Texas at Austin. Following the two week training session, select Interns were placed for on-the-job training in university TTOs at several locations in Central Texas including The Office of Technology Commercialization, The Austin Technology Incubator, and the IC<sup>2</sup> Institute at the University of Texas at Austin; Emergent Technologies, Austin; South Texas Technology Management (STTM), San Antonio; and Texas A&M University and the Borlaug Institute, College Station. In August 2009 the interns reconvened for a second two-week training session at the IC<sup>2</sup> Institute, to highlight their intern experience, to strengthen their learning processes, and to determine the best host institution for each Intern to benefit most from the internship. Host institutions included Portugal's other international partners: The Massachusetts Institute of Technology (MIT), Carnegie Mellon University, and Fraunhofer Institute, and the European Space Agency.

Over the years, the program was expanded to include Cambridge University in Oxford, England, Boston University in Massachusetts; and The University of Southern California. In all cases, considerable effort was made to assign each intern to the most appropriate host institution to achieve win-win scenarios for both the interns and their host. All interns typically received one-on-one mentoring by TT experts at their host institutions while they also conducted international market assessments of technologies from their home institutions. Internships generally ranged from two weeks for senior TTO managers to two-to-three months for TTO staff.

In late 2010, the FCT opened a second call for International Internships and accepted 20 Interns which included several interns from the previous year. In 2011, FCT funded seven new UTEN International Interns, but for longer stays. Please refer to Table 2.1 for a overall accounting of the International Interns and their host institutions.

UTEN has continued to push the envelope of international exchange, training, and institutional partnering for the intern program. In 2011 initiated a pilot reverse internship, in which a U.S.-based expert from the Office of Technology Commercialization at The University of Texas at Austin interned at TecMinho at the University of Minho for three months. As noted by Marta Catarino, Director of TecMinho:

We consider this pilot internship as a very successful activity, mostly following two perspectives: the connection with the OTC at The University of Texas at Austin and the personal profile of the Intern from UT-Austin. Highly promising contacts were established to:

- Identify and introduce key people to technologists from UMinho;
- Perform market validation research through interviews with opinion leaders from industry;
- Support for identifying key applications for early stage technologies through market feedback;
- Foster connections with new contacts to pair with researchers to solve specific technology development needs;
- Identify and make first contact with potential licensees, partners, and investors for UMinho's researchers and entrepreneurs.

### Results

The overall impact of the UTEN International Internship program cannot be overstated, as it has provided deep and personalized indoctrination in international technology transfer methods to key TTO personnel across Portugal, created the opportunity for extensive national and international networking, and facilitated specific technology transfer opportunities for the technologies represented by the interns. The International Internship Program has shown itself to be one of the most important of UTEN's initiatives by enhancing the professionalization of Portuguese TTO managers and staff through hands-on learning and enhanced know-how in their ability to facilitate



## Table 2.1. International Internships & Host Institutions, 2009-2011

### Fundação para a Ciência e a Tecnologia

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\*Luís Serina, European Space Agency ('09, '10)

### Instituto Gulbenkian de Ciência

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Margarida Prado, Fraunhofer Institute ('09)

### INPI: Portuguese Institute of Industrial Property

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\*Dina Chaves, IC<sup>2</sup> Institute, The University of Texas at Austin ('09, '10)

\* Miguel Moura, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), South Texas Technology Management (STTM), San Antonio, TX ('09)

### Instituto Pedro Nunes

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Antonio Cunha, Fraunhofer Institute ('09)

### Technical University of Lisbon

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Isabel Alte de Veiga, Texas A&M University and Borlaug Institute, College Station, Texas ('09)

\*Maria José Francisco, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('09, '10)

### University of Algarve

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\*Hugo Barros, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), Carnegie Mellon University ('10)

\*Alexandra Marques, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), South Texas Technology Mgmt (STTM), San Antonio, Texas ('10)

Luís Rodrigues, IC<sup>2</sup> Institute, The University of Texas at Austin ('11)

\*Sofia Vairinho, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), Carnegie Mellon University ('10) University of Cambridge ('10)

### University of Aveiro

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\*Ana Pinto, Massachusetts Institute of Technology ('09) Carnegie Mellon University, Pittsburgh, Pennsylvania ('09)

\*José P. Rainho, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), Carnegie Mellon University, Pittsburgh, Pennsylvania ('10)

\*Ana Rita Remígio, IC<sup>2</sup> Institute, The University of Texas at Austin, Hulsey IP (Austin) ('09) South Texas Technology Mgmt (STTM), San Antonio, TX ('10)

\*David Resende, IC<sup>2</sup> Institute, The University of Texas at Austin ('09, '10)

\*Marlos Silva, IC<sup>2</sup> Institute and OTC, The University of Texas at Austin ('09), Emergent Technologies, Austin, Texas ('10)

### University of Beira Interior

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Dina Pereira, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('09)

Pedro Serrão, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('09)

### University of Coimbra

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Jorge Figueira, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('10)

João Simões, Carnegie Mellon University ('11)

### University of Minho

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\*Miguel Carvalho, IC<sup>2</sup> Institute, The University of Texas at Austin ('11), Massachusetts Institute of Technology ('11)

Marta Catarino, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('09)

Nuno Osorio, IC<sup>2</sup> Institute, The University of Texas at Austin, Texas ('09)

\*Pedro Silva, OTC, The University of Texas at Austin, Texas ('09), Emergent Technologies, Austin, Texas ('10)

### University of Porto

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\*Filipe Castro, OTC, The University of Texas at Austin, Texas ('09, '10)

André Fernandes, University of Southern California ('11)

Diamantino Lopes, Carnegie Mellon University ('11)

Maria Oliveira, Boston University, Massachusetts ('10), Massachusetts Institute of Technology ('11)

\* Pedro Torres (UT Austin | Portugal CoLab ZON Award), IC<sup>2</sup> Institute, The University of Texas at Austin ('09, '10)

### University of Trás-os-Montes e Alto-Douro

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\*Carla Mascarenhas, IC<sup>2</sup> Institute, The University of Texas at Austin ('09), South Texas Technology Mgmt (STTM), San Antonio, Texas ('10)

### The University of Texas at Austin (Reverse Internship Pilot Program)

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\*Rosemary French, University of Minho ('11), University of Porto ('12)

\* Select participants received a two-phase internship



Carla Mascarenhas, UTEN Intern, responds to the group in Austin, Texas (2010).

successful international commercialization of Portuguese S&T (science and technologies).

### *Internship Self-Assessments*

According to the interns, the primary purposes of the on-site internships, in order of priority, were to:

1. Network with staff at their host organizations
2. Learn about technology business activities in the United States
3. Learn about advanced TT and commercialization tools and procedures
4. Observe and participate in tasks of the host organization
5. Assess market and commercialization opportunities for specific Portuguese technologies

Based on survey feedback of the Texas-based International Internship Program the Portuguese interns gave high ratings in their gaining valuable on-the-job TTO training and international network building experience as follows:

1. Twelve of 13 internships received the highest rating possible ("Yes, absolutely") when asked if they had valuable work experience.
2. Nine of 13 internships were rated as "Exceeded my expectations" or "Far exceeded my expectations," with the other four internships rated as "Met my expectations."
3. Nine of 12 internships (one person skipped the question) received the highest possible rating

in terms of recommendations of the internship experience to a friend or colleague, emphasizing the (1) educational value of learning skills and techniques, and/or (2) their observations that the professionals in the host institutions were willing to help, were supportive, and were friendly.

4. Ten of 13 internships received the highest possible rating ("very satisfied") in terms of satisfaction, with the other three internships rated "satisfied."

In addition to their general feedback, interns also cited a range of important specific accomplishments from their internships as follows:

1. I received a first-hand view on go/no-go decisions on technology commercialization cases.
2. Through participation, I understand better licensing process flows, and the work-flows and internal procedures of a TTO.
3. I gained improvement in assessment and commercialization skills, networking, license opportunities with U.S. companies, and cooperation between my TTO and my Texas TTO host.
4. Making contacts with companies using the UT brand for the first approach (cold phone call) was a big help. This is almost impossible to do in Portugal.
5. I learned negotiation techniques, licensing techniques, marketing techniques...
6. All the objectives of the internship were achieved. In my opinion, the most important



**Table 2.2 Texas Interns: Technology Assessments & Commercialization Activities, 2010**

Tech Transfer Office	UAlg/ CRIA	UMinho/ TecMinho	UTAD	UAveiro/ UATEC (3 interns)	ISA/Inovisa	IST	UNL	UPorto/ UPIN (2 interns)	Total
<b>INTERNS' TECHNOLOGY ASSESSMENTS</b>									
Technologies screened	2	20	2	21	1	3	4	11	64
MarketLooks completed	--	4	1	1	1	1	2	1	11
MarketLooks underway	1	--	1	4	--	--	2	1	9
<b>INTERNS' COMMERCIALIZATION ACTIVITIES</b>									
Prospects identified	20	65	6	96	16	11	34	22	270
Interest expressed	3	13	--	18	--	1	12	4	51
Negotiations initiated	2	3	--	6	--	1	1	--	13
Licensing	--	--	--	3	--	--	--	--	3
On-shoring	--	4	--	2	1	--	2	1	10
Private Equity Presentations	--	2	--	2	--	--	--	--	4

**Table 2.3 Definitions: Technology Assessments & Commercialization Activities**

<b>TECHNOLOGY ASSESSMENTS</b>	
Technologies screened	Defined as the early stage evaluation of a technology for commercialization activities (See section on RapidScreen)
MarketLooks completed	Actual commercialization reports and strategy documents produced by either U.S.-based consultants or Portuguese interns themselves
MarketLooks underway	Actual commercialization reports and strategy documents produced by either U.S.-based consultants or Portuguese interns themselves
<b>COMMERCIALIZATION ACTIVITIES</b>	
Prospects identified	A prospect is usually identified through in-depth discussions with either industry or academic institutions that are targets for potential commercialization activities centered on the Portuguese technology. More than a lead, a prospect is characterized as being based on an extensive email communication between parties, or at least a 10-minute conversation, to describe the technology and explore how it might be pertinent for the prospect organization. Example prospects that were identified and developed by interns under the guidance of UTEN mentors include Fortune 100 companies Microsoft, IBM, Halliburton, Schlumberger, MI Swaco, Stryker, Johnson and Johnson, Glaxo Smith Kline, and others. Academic institutions with private research concerns were also represented: UC Davis, Carnegie Mellon, UNC-Chapel Hill, Georgia Institute of Technology, Texas A&M University, and UT Austin.
Interest expressed	Interest expressed is defined as a request by a prospect for additional information related to a Portuguese technology that was showcased. Expressions of interest are characterized by a request for additional information, the delivery of that information, and follow-up discussion with the prospect.
Negotiations initiated	Negotiations are characterized by a formal request for information from the Portuguese intern related to pricing/terms for acquiring a technology or product associated with the UTEN program. Specific negotiation details are held by individual TTOs and, given their fluid state, many of these negotiations have been withheld from public-facing documents.
Licensing	The actual licensure of a Portuguese technology as a result of introductions made or presentations facilitated by the UTEN program.
On-shoring	On-shoring is defined as helping to move a Portuguese venture or technology to an international market through joint venture, IP bundling, spin-off, or similar mechanisms.
Private Equity Presentations	A pitch seeking investment funding for Portuguese technologies and/or ventures from venture capital, angel, or other private equity markets.



Alexandra Marques, S&T Manager at CRIA works with UTEN Program Manager Cliff Zintgraff (2010).

accomplishment is related to the technology assessment process and the possibility to implement it at my home TTO.

### *Assessments by Intern Supervisors/Mentors*

Uniformly, the supervisors and mentors at the host institutions were very satisfied with the interns and their internship experiences. Six of the supervisors said their intern's performances "exceeded" expectations and three said they "far exceeded" expectations. Further, all 10 supervisors and mentors stated that the internships had been beneficial to their organizations. Some of the benefits cited by the supervisors follow:

1. The intern ...helped us understand IP from a EU patent examiner's perspective.
2. The intern helped us find a partner in African agriculture development projects.
3. We ...established a long-term relationship. ...we intend to follow-up at least twice a month for on-going projects.
4. The intern helped us move a few technologies further in the process. The international perspective was helpful.
5. We have many nascent technologies that require significant incubation prior to realizing a path to wealth creation. (The intern) helped us define the challenges ahead and solutions to address these challenges.
6. Our intern was a great force multiplier who brought a different perspective to what we do at STTM. By force multiplier, I mean I took great comfort in knowing that I could hand off a project to her and it would be handled in a

conscientious and diligent manner. She took over several REAL projects as the primary licensing associate in charge of the project... that I had neglected for too long due to simple lack of bandwidth.

7. Real progress was made on multiple cases and we learned about programs in Portugal we may want to try at our location.
8. Case management assistance (by the intern) was very helpful and the global perspective of technologies helped with evaluations.
9. (Intern) helped us develop a licensing strategy for a technology that had previously not gained any momentum.
10. Our intern helped with technology evaluations; industry agreement evaluations (comps); and exposure to complex inter-university/company negotiations involving confidentiality and inter-institutional and sponsored research.

Tables 2.2 and 2.3 provides an accounting of technology assessments and commercialization activities of the Texas Interns as of 2010.



## 2.2 International Interns, “Then & Now”

*André Fernandes, University of Southern California*



*Then & Now:* Industrial Liaison Officer, UPIN, University of Porto Innovation, University of Porto.

*In his words:* The UTEN internship gave me the opportunity to participate in technology license pricing, as well as some of the frequent deal negotiations between USC Stevens Institute of Innovation and international companies (hopefully, the next level for Portuguese technology transfer offices). In addition, the internship has allowed me to gain a macro perspective of an active technology transfer organization. Also, I enjoyed working with a multicultural team with top qualifications in technology transfer, intellectual property and business as well as with diverse professional backgrounds, for instance, industry, law, fund raising, venture capital, start-up companies and academia. The dynamic economic and social characteristics of Los Angeles became a benchmark for me, too. I believe that this unique experience gave me the technical means and personal motivation to have a more organized and professional approach towards my mission at UPIN.

*In the words of his mentor (Richard Friedman):* It was a pleasure having André intern with USC Stevens. André was an enthusiastic “student” of how we operated our office. He studied up all he could on our office and asked a lot of great questions. He also participated in a range of activities. His contributions included technology marketing and judging for one of our translational funding and mentoring programs. It was a very positive experience having André intern with us. We appreciated the perspective and skills he brought and enjoyed having him as part of our team.

*Miguel Carvalho, Massachusetts Institute of Technology and The University of Texas at Austin*



*Then & Now:* Professor at University of Minho.

*In his own words:* The main objective of my internship was the promotion of internationalization of national technologies in the U.S. market. The experience acquired and the valuable network built between Texas and Massachusetts during the six months have been highly useful. A partnership was established with researchers from MIT, resulting in the incorporation of a spin-off from University of Minho and MIT one month after the end of the internship. Commercialization of our technologies with the U.S. Market started in 2012 and our approach to raise capital to propel the development of new technologies and improve the distributions channels for the existing ones is in place. New projects with researchers from University of Texas and MIT are being prepared. It would take years to make

possible this network without the support from the IC<sup>2</sup> Institute at The University of Texas at Austin and the Massachusetts Institute of Technology. I am thankful for the opportunity that FCT / UTEN Program made possible.”

*Maria Oliveira at Boston University*



*Then & Now:* Coordinator, UPIN, University of Porto Innovation, University of Porto.

*In her words:* UTEN internship was an excellent opportunity to immerse in a different environment and learn firsthand how different strategies may be applied to leverage the commercialization of technologies.

As a fellow at Boston University Office of Technology Development (OTD) I was fortunate to be involved in two projects: the implementation of a data management platform for the systematization of the entire technology commercialization process and an international technology transfer surveys analysis. As a result, I understood better the difficulties in transferring early stage technologies, regardless where the technology transfer office is located, the importance of establishing alliances with different stakeholders and the relevance of advocating for a proof of concept fund that might diminish the underlying risk for companies licensing our technologies.

*In the words of her mentor (Ashley Stevens):* I enjoyed having a Fellow from a Portuguese technology transfer office work in my office for three months and found the relationship to be mutually beneficial – the duration was long enough for the Fellow to take on a couple of significant projects, plus we were able to undertake some research on international technology transfer activities. The Fellowship led to me being invited to visit Portugal and to speak at the UTEN Annual Meeting, where I was impressed at the progress Portugal has made in a short time in developing a sophisticated technology transfer capability.

*In the words of her mentor (Vinit Nijhawan):* Maria Oliveira interned as an International Fellow at Boston University’s Office of Technology Development. Maria participated in a number of projects at BU OTD, including providing support on individual licensing opportunities. Maria learned a lot about how technology transfer is done at U.S. research universities and also about the innovative methodology for technology transfer at BU OTD. She contributed a great deal to BU OTD while she was here and I was very pleased with her great attitude, intelligence, judgement and dedication towards university technology transfer.”

### *Ana Teresa Pinto, Carnegie Mellon University*



*Then:* Project Manager at UATEC, Technology Transfer Unit of the Universidade de Aveiro.

*Now:* Senior Project Manager, UATEC (Technology Transfer Unit of the Universidade de Aveiro).

*In her words:* The participation on UTEN Internship Program on Technology Transfer allowed me to have contact with institutions that are extremely advanced in the area of Technology Transfer and University-Business cooperation. Being able to know them well (its structures and organization), as well as its social contexts, was extremely enriching and useful, once it was possible to learn about, and check in loco, what are the key factors that make these two activities, so important for the development of an innovative economy, successful ones.

The practice developed at CTTEC, Carnegie Mellon allowed me to be in touch with already consolidated and tested Technology Transfer specific methods and techniques, acquiring more knowledge in this area and gaining more confidence and resourcefulness in its practice. The practical and theoretical knowledge acquired there became a valuable reference for the completion of my work in Portugal, in this area.

### *Diamantino Lopes, Carnegie Mellon University*



*Then:* Researcher at INESCPORTO and Professor and director of Chemical Engineering course at ISPAB, Instituto Superior de Paços de Brandão.

*Now:* CEO of Metablue Solution, Lda. and CEO of Know Idea Consultants, Lda.

*In his words:* During my internship's Phase 1 (28th May 28 - June 6, 2011) at Carnegie Mellon University, I had the opportunity to stay in CTTEC (Center for Technology Transfer and Enterprise Creation), which allowed me to follow this institution's daily activities and routines. During this introductory internship, supervision was given by Tara Branstad (CTTEC Associate Director). The whole CTTEC team provided me with invaluable assistance. The experience was more than I could have expected, it was a unique opportunity to understand Carnegie Mellon University's results valorization mechanisms and how they stimulate entrepreneurial projects.

- During the internship's Phase 1, I joined CTTEC's internal meetings, with Tara Branstad, Robert Woldridge (Director), Anita Jesionowski, Reed McManigle and Gorana Smailagic. This provided a greater understanding of Carnegie Mellon's Technology Transfer and for R&D results valorization processes.
- In order to identify common interests between Carnegie Mellon University and INESC Porto,

I also held individual meetings with Curt Stone (Director Quality of Life Foundry & Industrial Liaison), with Jim "Oz" Osborn (Executive Director of Quality of Life Technology Center) and with Robert F. Davis (Department of Materials Science and Engineering). These meetings allowed me to get acquainted with their technology portfolio.

- Additionally, I held a meeting with a Carnegie Mellon entrepreneur: Raymond F. Vennare of Thermal Therapeutics Systems (Veratherm), who shared his experience and opinions concerning INESC Porto technologies.
- I was invited to participate in the presentation of Jason Gu's project to Business Angels.
- I assisted the team during the reception of a Spanish delegation at Local Development Agency, in order to share my personal UTEN experience.

Phase 1 was for me a unique opportunity to understand how Carnegie Mellon University aggregate value to R&D results and the mechanisms used to stimulate entrepreneurial projects, it was extremely rewarding. In addition to strengthening my skills, I thoroughly enjoyed working with such a great team of people.

### *Hugo Filipe de Brito Barros, Carnegie Mellon University and The University of Texas at Austin*



*Then:* Technology Transfer & Entrepreneurship Support Officer at CRIA, Division of Entrepreneurship & Technology Transfer of the University of Algarve.

*Now:* Coordinator of CRIA, Division of Entrepreneurship & Technology Transfer at the University of Algarve.

*In his words:* The participation in the UTEN Network was a unique opportunity to benchmark international good practices, and to increase competence and experience in technology transfer, commercialization, and entrepreneurship support. Moreover, it was a chance to develop an international network that still today is a support to the activity developed in the CRIA. The professional development program allowed for new competencies and knowledge in innovation policies, processes, approaches, and methodologies regarding tech transfer and entrepreneurship support used by the international partners.

This experience allowed for the identification of best practices in policies and processes regarding tech transfer, entrepreneurship support and regional development through networking, developing the existing relations between Universities and private entities, and promoting innovative strategies on the University towards technology transfer, and commercialization of knowledge.



### *João Simões, Carnegie Mellon University*



*Then & Now:* Senior Manager at University of Coimbra Tech Transfer Office, DITS (Divisão de Inovação e Transferências do Saber da Universidade de Coimbra)

*In his words:* For this particular internship we acquired the necessary training in professional technology transfer skills, with the main objective of leveraging our capabilities and

enhancing our potential for the establishment of successful commercialization routes.

Hence, we crosschecked our procedures, tools and techniques and to learn some new ones, in order to significantly improve our market assessment skills and business intelligence, towards licensing. For this advanced on-the-job training, we took some technologies developed in the University of Coimbra for assessment using the methodology adopted by CTTEC at Carnegie Mellon University.”

### *José Paulo Rainho, Carnegie Mellon University and The University of Texas at Austin*



*Then & Now:* Coordinator, UATEC (Technology Transfer Unit of the Universidade de Aveiro)

*In his words:* The Individual Specialized Internship in Technology Transfer aimed at improving skills and exchanging views on topics ranging from licensing, negotiation, closing the deal, and post licensing; to formation, launching, and growth of

university start-ups. The goal was to get acquainted with CTTEC’s best practices and procedures in technology transfer, adapting them to the reality and needs of the Universidade de Aveiro. Particular emphasis was given to post licensing management, a topic still under exploited among Portuguese TTOs, and where the Universidade de Aveiro aims at taking the lead.

The medium and long-term outcomes translate themselves into an increase of licensing agreements and licensing outcomes, strengthening of licensor/ licensee relationships, and acceleration of the process of bringing ideas into the market, namely through start-ups’ creation.

*In the words of his mentor (Tara Brandstad):* During the two years from 2010 through 2011, Carnegie Mellon CTTEC, in partnership with UTEN and Carnegie Mellon|Portugal, hosted six Portuguese technology transfer professionals from four different Portuguese universities for professional development experiences. Each professional development experience was unique to the individual and each was planned according to their primary goals and expected outcomes. The Portuguese universities represented in the program were: Universidade do Algarve; Universidade de Aveiro; Universidade de Coimbra; and Universidade do Porto.

Professional development experiences ranged from two weeks to three months in duration. While resident at CTTEC, participants were exposed to best practices in technology transfer policies, practices, and processes. In addition, participants were acquainted with the larger Carnegie Mellon and Pittsburgh commercialization and entrepreneurial ecosystems. Most participants split their time between working on “home” projects, using the opportunity of being in the United States to expand their networks for the benefit of their own practice, and working directly with Carnegie Mellon faculty and CTTEC staff on CTTEC technology transfer projects (such as invention disclosure review, licensing, start-up company development, etc.).

The professional development experiences were well received by the participants. They appreciated the individual learning approach taken by CTTEC and the opportunity to work on real projects, utilizing best practices. From our perspective, we found the technology transfer professionals from Portuguese universities to be highly knowledgeable professionals in the field who were able to immediately have an impact on CTTEC projects. They exhibited the desire to institutionalize best practices at their home universities in anticipation of future opportunities and challenges as technology transfer functions expand and mature at their home universities. We believe having the experience of operating in a mature technology transfer environment, such as CTTEC, will allow Portuguese universities to meet these future challenges and maximize future opportunities to the benefit of their home universities, regions and economy.”

### *Luís Rodrigues, The University of Texas at Austin:*



*Then & Now:* Technology Transfer and Entrepreneurship Support Officer at CRIA, Division of Entrepreneurship and Technology Transfer at the University of Algarve.

*In his words:* My internship experience at the Austin Technology Incubator (UT Austin) was intense and diversified. Therefore, rich! I have returned to Portugal motivated and better equipped to carry out my

duties and tasks at the Division of Entrepreneurship and Technology Transfer (CRIA). I am convinced that these combined international experiences – mine and of my colleagues - adds up to CRIA’s value proposition and that our enlarged U.S. contact network is a valuable asset for UALG’s entrepreneurial community.

Despite the difficult economic period, CRIA’s team will keep pushing and striving to develop a richer entrepreneurial ecosystem in Algarve. I am most grateful to the UTEN Portugal Program for this great opportunity!



Hoyt Tomas, President of OpenAlgae met with Luis Rodrigues (UTEN International Intern), and David Gibson (UTEN Austin Director) (2011)..

### *Pedro Silva, Emergent Technologies, Inc., and The University of Texas at Austin*



*Then:* Technology Transfer Officer, TecMinho

*Now:* Coordinator of S&T Commercialization Unit, TecMinho

*In his words:* Some key lessons learned while in the U.S. are now being employed at my everyday work as key principles to observe: selectivity, prioritization, focus, discipline, teamwork, and rigorous time allocation are the good habits taken from the U.S. It helped me develop

a rather acute business attitude in TT operations. Technology management skills and know-how were enhanced, having been translated into new processes, procedures, skills, and techniques, leading to better decision making at important milestones of the overall technology valorization process.

*In the words of TecMinho Director, Marta Catarina (2009):* I had a meeting with Pedro Silva when he was enthusiastically debriefing his first experience in Texas. He has a lot of very good ideas, and we are now organizing internal communication so that part of his experience can be shared with our colleagues. We are preparing the internship plan in such a way that it both includes his valuable insights from this first immersion in the Texas innovation ecosystem and our strategic plan for this year and the next.

I am delighted with Pedro's feedback and would like to thank all of you for the great effort in putting together this training program. I am convinced that this and the following internship opportunities will make a significant difference in our TTO performance, our relation with the University and our impact in the region.

### *David Resende, The University of Texas at Austin*



*Then:* Researcher in GOVCOPP Research Unit and Assistant Professor of ESTGA-University of Aveiro

*Now:* Professor of University of Aveiro

*In his words:* The objective of my internship in Austin has been to finish and validate a qualitative analysis tool, which technology transfer offices (TTOs) can utilize to improve their efficiency and effectiveness. Such qualitative tool is one of the novelties presented in

the output of our research work, the article published in Technovation in 2012.<sup>1</sup> The other is information that advances understanding of the needed processes, procedures and structures to transfer technology, as a set of best practices.

1. David N. Resende, David V. Gibson, James Jarrett. 2012. "BTP –Best Transfer Practices. A tool for qualitative analysis of tech-transfer offices: A cross cultural analysis. *Technovation*. <http://dx.doi.org/10.1016/j.technovation.2012.09.001>."



From December 2008 to September 2010 a variety of methodologies (document analysis, participative observation, interviews and surveys) generated data which led to development of a theoretical framework. The theoretical framework, called Master Plan for Technology Transfer (TT), is a reference schema for best practices that contains 271 rules (good practices) referring to 43 facilitators distributed in seven groups. The facilitators and rules were selected from a coding process based on grounded theory, where facilitators are the categories and rules are their properties.

Based on the methodologies and development of the Master Plan, we constructed a tool called BTP (Best Transfer Practices) which is a qualitative tool to assess and study TTOs and their host R&D institutions. The collection of rules and facilitators are the soul of our BTP. It is our contribution to the knowledge of actual practices in TT.

We would like to thank the Portuguese Science and Technology Foundation (FCT) for financial support of this work within the UTEN project. The authors would also like to thank the interviewees who generously shared their time and experience with us and acknowledge the

support from all the people at the IC<sup>2</sup> Institute at The University of Austin at Texas.

*Dina Chaves, The University of Texas at Austin*



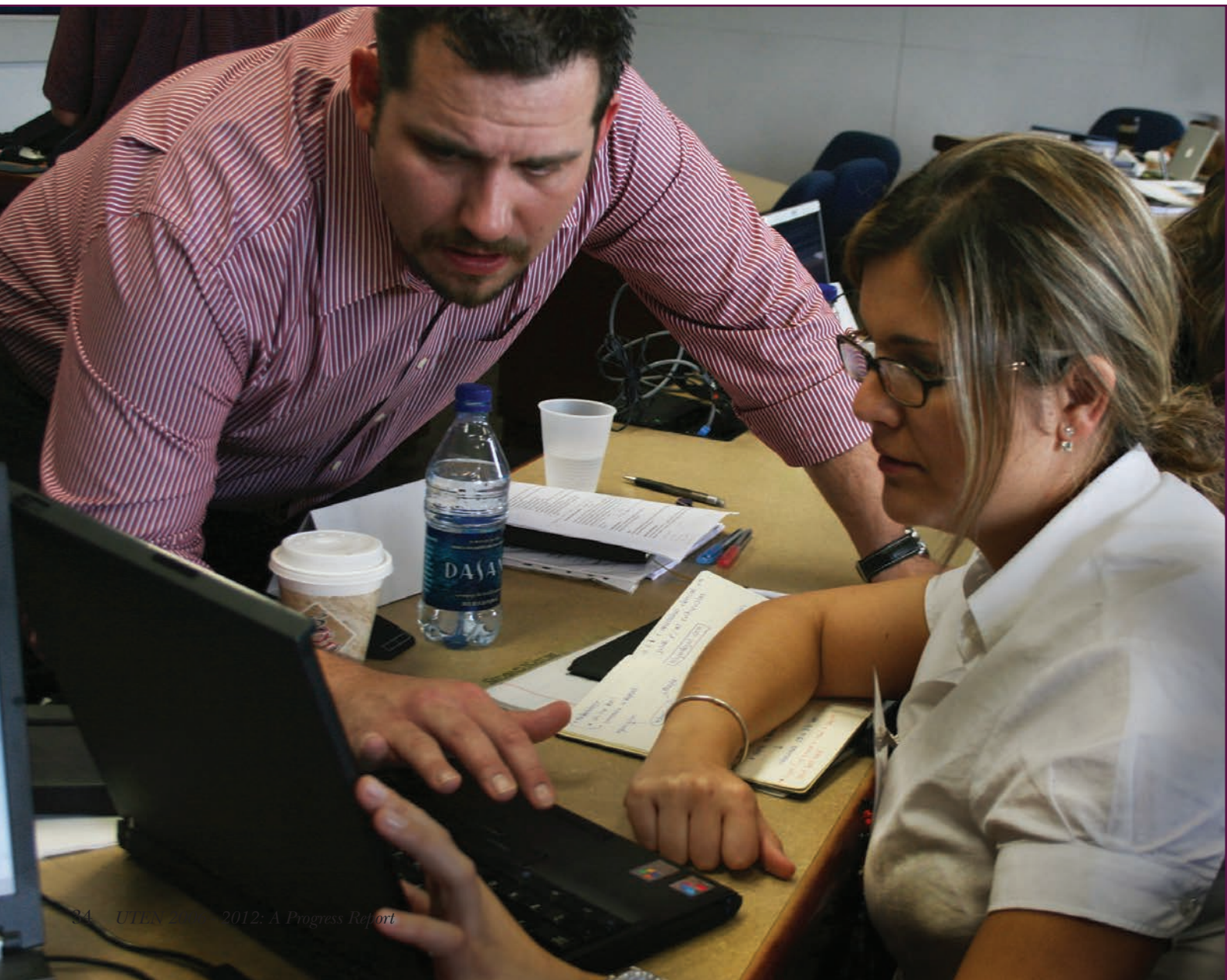
*Then:* Senior Officer, Portuguese Industrial Property Office.

*Now:* Consultancy & Technology Intelligence Director, Clarke, Modet & Cº Portugal.

*In her words:* The UTEN program reflects the pattern of “triple helix” proposed by Etzkowitz, to the extent that the efforts of the three “actors” fundamental to the success of the Technology Transfer and Economic Valuation of Knowledge: State, University and Market. The UTEN Program proved to be extremely important for acquisition and upgrading of skills in the area of economic value determination of industrial property rights. Regarding my participation in the internship there are essentially three considerations:

- The training and the activities included in

Heath Naquin, UTEN Program Manager, and Dina Chaves, UTEN Intern, work in Austin, Texas (2010).



the internship program allowed me to meet the American reality of an university such as University of Texas, ranked in the third place of Intellectual Property creation and management;

- The development of the commercialization strategy for a patent was a hands-on experience helpful to identify the right path to the market, based on the theory gained over the past years, in the technology transfer area;
- The contacts made, and that I still use, the improvement of the technical knowledge and the cultural environmental allows me, nowadays, to be more efficient and more confident in the IP commercialization process.

### *Dina Pereira, The University of Texas at Austin*



*Then:* Responsible for the IP Office at ICI - UBI.

*Now:* Responsible for the IP Office at ICI - UBI and Commercial Coordinator of UBI's academic spin-offs; Researcher at CAST, Centre for Aerospace Science and Technologies, in the field of Industrial Management

*In her words:* My focus for the first training phase is IC<sup>2</sup> was on "Technology Development" meaning

getting extra help from experts on my building and assessing capacity for technology portfolios, helping me to assess market potential for technologies, and helping me to perform subsequent market outreach for specific technologies from my university. For achieving this the team at IC<sup>2</sup> provided training on two methodologies from the UTEN program, one focused on portfolio building and assessment, and one on market assessment. For this training I've used 3 patented technologies from my university as living cases which could benefit from a U.S.-focused market assessment, and that could have potential markets in the United States. I had also the privilege of working with Heath Naquin (whose enthusiasm and commercial proactiveness taught me how to break the ice when trying to achieve outside partners to exploit technologies), Don Jarrel of Digital Thinking (who provided me with additional valuable information regarding valuation of IP rights), and Robert Robb at UT-Dallas OTC.

It was really important to have this kick in TT practices. I've had the real perception of what it is to develop commercial activities when dealing with academic technologies. I have managed to develop extra connections made possible by these initial contacts and we are exploring them with spin-offs at my university. Furthermore, I've managed to get support from UTEN partners from Cambridge and Carnegie Mellon for accomplishing doctoral research on technology transfer and academic patents exploitation.

I didn't realize the second phase of internship, but I've managed to participate in additional events and especially one, the UIDP meeting in April 2011, that

besides providing the outputs of the annual conference offered us the possibility of getting affiliated to the UIDP network, in order to attend future events such as the conference, to build the relationships and get to know UIDP better, to perform joint research and or training in conjunction, to develop potential work with Freemind consulting to identify and go after U.S. grant money for research, to obtain follow-up with executives from John Deere regarding agricultural R&D projects in Portugal and to benefit from the opportunity to lead or take part in a committee effort to define UIDP international partnerships program and strategy. This made possible additional meetings and getting-to-know the how-it-works of several institutions in California related with TT practices, namely, the UC Irvine Incubation Centre, from which we can develop student/faculty exchange programs and possible internships, the USC for developing possible faculty or student exchanges and a series of "small bets" in strategically aligned areas of R&D and/or commercialization. In addition, we went to UCSD who provided us with potential contacts for developing possible exchange of faculty and/or students, or, joint certificate or degree programs, potential training and internship programs with Von Liebig Center and faculty exchange with School of Engineering, and possible participation in multi-disciplinary student teams working with industry.

As a practical result we are now designing the schedules and programs for one of our spin-offs to stay 2 months in Texas, in the field of energy starting next December in order to prospect commercial partnerships.

### *Jorge Figueira, The University of Texas at Austin*



*Then & Now:* University of Coimbra Tech Transfer Office Director-DITS-Divisão de Inovação e Transferências do Saber da Universidade de Coimbra

*In his words:* The UTEN Internship allowed us to assess good practices related with Innovation Ecosystem Management namely contacting with major stakeholders of the system in the United States. Identifying

further collaboration and improvement opportunities was a great achievement and helped us to fine tune our own regional ecosystem. During the internship it was also of great importance to identify critical steps in the process of assessing commercial potential in R&D project results that served as basis for the second internship made by another colleague of our team."

*In the words of his mentor (Heath Naquin):* Over the past several years, I have had the distinct privilege of working with a number of Portuguese Technology Transfer Officers during their mentorship periods in the United States. Without fail, I have been impressed with the level of dedication and involvement each officer has had with both their home and host institutions throughout the course of the UTEN program. One of the most gratifying things I observed among intern participants was the fundamental shift in attitude towards creative



deal making and technology assessment. Over the course of time spent in the United States, I noticed that Portuguese TT Officers were much more aggressive and creative at making deals occur, a fact mentioned in the 2010 UTEN Annual Report. I know that this attitude towards deal making, fundamental to Technology Transfer Office success, has been transported back into their home institutions and will serve the Portuguese technology transfer community for years to come. It has been an honor working with all participants in the UTEN program and sincerely hope that the strong relationship, business and personal, will continue to endure for years to come.

#### *Filipe Castro, The University of Texas at Austin*



*Then:* Technological Entrepreneurship Management, University of Porto (UPIN)

*Now:* Technology Business Manager, University of Porto (UPIN)

*In his words:* The Internship in Technology Transfer was an outstanding opportunity to improve the way I was doing technology commercialization and also to restructure and readapt

organizational procedures within our office. During my experience at the OTC at The University of Texas at Austin I improved so many aspects and skills that my professional life really changed a lot for better.

#### *Marlos Silva, The University of Texas at Austin*



*Then:* Technology Transfer Officer/Project Manager, UATEC, University of Aveiro's Technology Transfer Unit

*Now:* Project Coordinator at InovaRia, Association of Companies for an Innovation Network in Aveiro

*In his words:* The UTEN Program was a great opportunity to develop skills and networking to improve my own capacity to generate value through R&D project management. It was also a great experience that I tried to take

the best of, making very special friends and enjoying a very special period of my life, both professionally and personally. There is no doubt I have improved my technical expertise and leadership skills within the internship, very important things that I apply with my team today. Nowadays, despite I have left the University TTO in November, 2010, I still make business with people I have met in Austin, specially in collaborative projects involving Texas and U.S.-based institutions. In April, 2011 I was invited to give a speech at the Monterrey Venture 2011, in Monterrey, Mexico, about TTO management, mainly because of my work within the UTEN program and Texas institutions. The UTEN program built a bridge between Portugal and United States so from time to time I am compelled to cross that bridge seeking for cooperation ad much more.

*In the words of his mentors (Jitendra Jain and Max Green):* The Office of Technology Commercialization (OTC)

Marlos Silva (right), UTEN intern with mentor Max Green at the UT Austin Office of Technology Commercialization (2010).



at The University of Texas at Austin had the privilege to partner with the University Technology Enterprise Network (UTEN), which is managed by the UT Austin IC<sup>2</sup> Institute. Through the program, OTC Licensing Specialists were assigned the international interns for three months in 2009. The OTC representatives mentored and shared their expertise with the interns on topics such as market assessment of technologies and accelerating licensing. “Working with the interns via this program was a wonderful experience! While the interns gained valuable knowledge on our tech transfer process, their insights on commercializing technologies internationally were invaluable,” said Jitendra Jain, a licensing specialist at OTC. Max green, OTC Licensing Specialist also mentored the UTEN interns and provided helpful insights into the nuts and bolts of commercialization.

**Isabel Alte da Veiga, Texas A&M University and The University of Texas at Austin**



*Then:* Technology Transfer and IP Manager at INOVISA /ISA-UTL.

*Now:* Professor at School Fernando Lopes Graça, Colégio Salesiano.

*In her words:* Working with UTEN helped us to set up a project to create a national TTO for the Agriculture and Food sectors, with the aim of involving all the Portuguese Agriculture Schools.

*In the words of Luís Mira, President of INOVISA, Vice President of ISA-UTL:* Isabel spent 12 weeks in Texas, working closely and getting strategic orientation from experts at Texas A&M University and with UTEN mentors at UTEN Austin. This allowed us to create a strong base for our projects. UTEN provided a source of formal knowledge on technology transfer and technology-based entrepreneurship through internships in the United States, as well as the many workshops organized with experts with a longer and richer experience than ours. It would never have been possible to prepare the people that currently work at INOVISA so well and so fast without this help.

**Alexandra Marques, South Texas Technology Management and The University of Texas at Austin**



*Then & Now:* Science and Technology Manager at CRIA (Division of Entrepreneurship and Technology Transfer) at the University of Algarve (UAlg).

*In her words:* As a Science and Technology Manager within the TTO at the University of Algarve (CRIA), I was able to deepen my competencies in technology evaluation, technology screening and technology commercialization.

CRIA already has some work performed in these areas but there was still the need to improve in

speed and efficiency, regarding technology transfer methodologies. The UTEN internship allowed me to contribute for the improvement of CRIA's performance in technology transfer. Under the supervision of UTEN experts, I developed the following areas:

- Apply the methodology for an adequate technology scouting and technology screening
- Learn and practice efficient techniques for a successful technology transfer
- Learn how to identify and highlight the unique and desirable features of UAlg's technology portfolio
- Study the U.S. market pain and market opportunities for the chosen Portuguese technologies
- Learn and practice effective marketing techniques for a successful commercial presentation to possible investors
- Learn more about and practice methodologies and databases to evaluate the technologies which are likely to achieve commercial success
- Establish and strengthen the network between UAlg's TTO and American Offices of technology transfer, inserted in the program of UTEN
- Practice technology validation as well as to technology valuation
- Focus on marine Portuguese and U.S. technologies with global market potential.

*In the words of her mentor (Cliff Zintgraff):* Alexandra brought to her internship experience in both marine science and in technology transfer. Leveraging these skills, we embarked on market research of several technologies, one of which held the promise to increase fish stocks and value through better meeting of fish nutritional needs. She embraced the primary research process, and she was able to make personal visits to potential technology partners and licensees in the area. We've had numerous opportunities since her UTEN internship to work on deploying the lessons learned in the UTEN program to operations at CRIA at the University of Algarve.

**Ana Rita Remígio, South Texas Technology Management and The University of Texas at Austin**



*Then & Now:* Project Manager at UATEC, Technology Transfer Unit of the Universidade de Aveiro.

*In her words:* The goals of the Individual Specialized Internship in Technology Transfer consisted of skills and experience acquisition and improvement in licensing related issues. The ten-week internship was mentored by Sean Thompson (MS, MBA, CLP), as I assumed the duties and responsibilities associated

with being a STTM Licensing Associate. I also worked closely with Licensing Associates John Fritz (MS, MBA) and Christine Burke (PhD). Systematization and





The networking relationships between TTOs within Portugal are key to the UTEN vision. UTEN interns Carla Mascarenhas (UTAD) and Ana Rita Remígio (UAveiro) discuss the workshop topics of the day (2009).

documentation of licensing processes and frameworks at STTM, exploration of IP management tools, and acquisition of licensing skills and experience through real case management were among the internship goals. The medium and long-term objectives at my home institution were to effectively and efficiently enhance knowledge valorization and commercialization practices and procedures in licensing, which have been thoroughly achieved over the last three years, namely through IP and licensing workflow management optimization, acquisition and customization of IP and TT tools and resources, creation and/or update of forms and other technical documents, creation of the University of Aveiro Technology Transfer Manual, and, above all, the implementation of the aforementioned procedures, which have been having a positive impact on licensing outcomes.

*In the words of her mentor, Cliff Zintgraff:* Ana Rita Remígio arrived in the U.S. from the University of Aveiro, an office working hard to build a professional culture around technology transfer. She brought that attitude and perspective to her market research on University of Aveiro technologies. We worked together on technologies involving water conversation, ceramics and masonry, learning directly from the market how these technologies could best be brought to market. She would later publish an article entitled Technology Transfer at the University of Aveiro that discussed, among other aspects of UTEN, the importance of entrepreneurial

attitudes and commercialization expertise! I've worked with Ana Rita since her internship to help her university deploy lessons from the UTEN program. It was an honor to work with Ana Rita and see her apply lessons learned from her internship to further advance professional culture at the University of Aveiro and for the larger Portuguese technology transfer community.

*In the words of her mentor (Sean Thompson):* A country's goal to build a knowledge and innovation-based economy can be practically achieved only if the native-born innovations are properly managed, developed and commercialized properly – from the beginning. With this in mind, I applaud Portugal's wise investment in the development of its technology transfer professionals via the UTEN program.

I became involved in the UTEN program as a classroom trainer at the University of Texas IC<sup>2</sup> Institute. There I met Ana Rita who, as I found out later, was just starting her professional career. I quickly became impressed with how rapidly she grasped the concepts I and my colleagues were presenting. I was also impressed with her genuine enthusiasm and passion to learn the practice of technology transfer with the overall goal of helping to build a state-of-the-art technology transfer practice at the University of Aveiro. With this in mind, I was pleasantly surprised and flattered to learn that Ana Rita proposed to spend her internship with us at STTM, and to have me as her supervisor; I

eagerly accepted. During the two and a half months of Ana Rita's internship, I had the opportunity to get to know Ana Rita as a professional. We had many one-on-one in-depth discussions on the technical aspects of technology management. It was deeply gratifying to watch her demonstrate her grasp of what I was teaching in the context of her skillful and insightful management of the real cases she was personally responsible for managing while here at STTM.

After seeing her in action and after having watched her achieve her internship goals, I am certain that Ana Rita is well prepared to contribute to the achievement of UATEC's technology transfer goals. UATEC is fortunate to have her.

### *Carla Mascarenhas, South Texas Technology Management and The University of Texas at Austin*



*Then & Now:* Entrepreneurship and Technology Transfer Officer at UTAD.

*In her words:* As a result of this technology-based training, the UTAD TTO is making these changes to its technology transfer processes:

- Development of public technology descriptions with inventors: UTAD has started working with researchers to create public descriptions of their technologies, both for promotion, and also to help researchers engage in the issues required for successful commercialization.
- Incorporation of broad market review into standard processes: UTAD will conduct more rapid surveys of the market to get broad market perspective on a technology, and will avoid relying on one industry opinion of a technology's potential.
- Aggressive marketing before patenting: The process of marketing and market research will occur before applying for patents; in essence, UTAD will begin the search for potential buyers at the very beginning of the process.
- Consideration of time limits in contracts and processes.

UTAD will specifically incorporate procedures and contract terms to avoid unnecessary delays and to motivate forward movement of the technology commercialization process.

*In the words of her mentor (Cliff Zintgraff):* Carla Mascarenhas performed, along with her internship at STTM, diligent research of three UTAD technologies in the U.S. market. One of the best "aha!" moments of the program came when we discovered through Carla's efforts that a university industry partner had been quietly shopping a technology for which they had a budding partnership! The IC<sup>2</sup> interview process had led us to the "prospect," and with this surprising discovery, and we all learned once again that primary research

through interviews is a powerful process to learn the "voice of the market" for technologies. Carla has taken these lessons, which compliment those from her STTM internship, and applied them with the same diligence in her work at UTAD.

### *Miguel Moura, South Texas Technology Management and The University of Texas at Austin*



*Then & Now:* Patent Examiner at the Portuguese National Institute of Industrial Property (INPI).

*In his words:* The UTEN internship taught me the language, goals and challenges of TTO's everywhere, allowing me to interact with them on a deeper level. Nowadays, whenever I deliver a talk at an university or meet with TTO's and the researchers they manage, I know how to convey my message and get them to work with INPI towards having better and more useful patents."

*In the words of his mentor (Cliff Zintgraff):* Miguel Moura came to his internships with his experience reviewing patents at INPI. In parallel to his STTM internship, he did market research on a medical device, and also on a DNA analysis platform. Miguel very quickly absorbed the lessons of market research techniques and brought them to bear, conducting several market interviews and making recommendations about how to proceed with each technology. Even more, Miguel integrated these lessons into a well-considered, forward-thinking presentation on how to advance entrepreneurial culture at INPI. These lessons learned and integrated into his professional capabilities will serve him and Portugal well for years to come.

### *Luís Serina, European Space Agency*



*Then & Now:* Technical Officer at FCT Space Office

*In his words:* The internship in the European Space Agency Technology Transfer Office has allowed the implementation of activities and processes in Portugal to transfer Portuguese space technology to downstream markets. The main initiative enabled by the internship has been the Portuguese Technology

Transfer Initiative, led by IPN, which has been recently implemented and can be found in the following website - <http://ptti.ipn.pt/pages/ptti>."

*In the words of his mentor (Frank Salzgeber):* About the internship and its impact: The internship in the European Space Agency Technology Transfer Office has allowed the implementation of activities and processes in Portugal to transfer Portuguese space technology to downstream markets. The main initiative enabled by the internship has been the Portuguese Technology Transfer Initiative, led by IPN. UTEN internship program with ESA has been a key tool to transfer ESA



know-how in space technology transfer to Portugal, on a wide range of ESA activities, such as technology assessment, intellectual property exploitation and brokerage. Portugal has now better tools to implement tailor made processes to improve space technology transfer.

As a result, Instituto Pedro Nunes is now implementing the Portuguese Space technology transfer initiative (PTTI), in collaboration with ESA and FCT Space Office. This new initiative was customized to the Portuguese ecosystem and it is a tool to help promoting the exploitation of Portuguese space know-how and technology in space to downstream market applications. We're hopeful that it will provide opportunities to create more jobs and better companies in Portugal. Portuguese internships in ESA have been essential to transfer know how about the way ESA works and connect Portugal to international networks.

#### *Sofia Vairinho, University of Cambridge, and The University of Texas at Austin*



*Then & Now:* Senior Legal Advisor and Manager of the IP and Licensing Unit at CRIA (Division of Entrepreneurship and Technology Transfer) of the University of Algarve.

*In her words:* The participation in the UTEN Network represented a single step on the understanding of technology transfer and spin-off creation policies. The engagement with international, recognized and reputed partners allowed the

opportunity to share visions, and discuss, local and regional, strategies regarding the knowledge protection, the technology commercialization and the companies internationalization.

It represented a unique chance to establish profitable collaborations overseas: the professional and personal links promoted by the UTEN Network will remain for the benefits of a growing country skilled on TT and spin-offs internationalization.

The international partners involved in the network showed and taught us how to reach new markets and how to commercialize our technologies on behalf of entrepreneurship and national growth.

For the IP and Licensing Unit at CRIA (Division of Entrepreneurship and Technology Transfer) of the University of Algarve (UAlg) new competencies were developed and with the support of the Mentors involved on the UTEN Professional Development Programs a new "modus operandi" for TT and spin-off creation was designed, which promote the development of internal regulations and procedures, in order to increase the interaction between University of Algarve and private entities.

#### *Rosemary French, Reverse Intern from The University of Texas at Austin to TecMinho (2011) and UPIN (2012).*



*Then:* Licensing Assistant, Office of Technology Commercialization.

*Now:* Social Science / Humanities Research Associate II, IC<sup>2</sup> Institute.

*In her own words regarding TecMinho:* In 2011, I participated in a three-month "Reverse Internship" pilot program at TecMinho, the TTO for the University of Minho in Guimarães, Portugal. There were three main objectives: to observe and

recommend practices that might increase the success of TecMinho's office, to promote Portugal technologies in the international market, and to strengthen the cooperation between U.Minho and The University of Texas at Austin. I worked with the TecMinho team to reach out to international research and development partners, sponsors, physician champions, and industry experts to explore collaboration opportunities on multiple UMinho technologies, ranging from medical devices to bioinformatics to biofuels. These conversations focused on how to best develop UMinho technologies into commercially viable products, and align potential technology applications to clinical and market needs.

This past spring, I spent six weeks in Porto to perform research on incubation practices across Portugal and provide support to the technology transfer office at the University of Porto. During my visit, I conducted a series of interviews with the directors of ten university-affiliated research technology parks and business incubators to analyze best practices in business incubation for the region, and the ways in which policy, culture and funding mechanisms are tied to start-up company creation in Portugal. The findings from this study are expected to be published in an academic research publication, with the aim to highlight incubation best practices and policy developments that can enhance the success of technology-based start-up company creation in Portugal, and lead to the growth of jobs and wealth.

In addition to these research efforts, I collaborated with the University of Porto Innovation (UPIN) Knowledge Transfer Office to support the international commercialization of early-stage technologies developed by UPorto researchers. I assisted the UPIN team with finding the necessary research, industry, and business partners located in the United States, as well as from other international regions, to turn their laboratory prototypes into marketable products.

*In the words of Marta Catarino, Director of TecMinho:* We consider this pilot internship as a very successful activity, mostly following two perspectives: the connection with the OTC/UT and Rosemary's personal profile. Highly promising contacts were established. Rosemary was also able to benefit from the exposure to and hands-on experience with TecMinho's strategies, processes and methodologies for technology commercialization, which she easily got familiar with. I strongly believe it

is important to leverage the opportunity of this three-month experience into a long-lasting collaboration; and that it would be a great loss in terms of the impact of this internship's potential for TecMinho as well as other TTOs in Portugal, if we leave the follow-up of these established contacts and the on-going work to informal and voluntary activities.

*In the words of Maria Oliveira, UPIN Director:* Rosemary French participated in a reverse internship at UPIN in 2012. We confirm that the reverse internship program was extremely beneficial to all parties involved; even though we believe some credit has to be given to how the program was organized we feel that Rosemary's motivation for collaborating really made the difference in the outcome of this internship. With a keen desire to add value to different research projects and a strong sense of autonomy, Rosemary proved that she could adapt to different environments while still maintaining a strong workflow that exceeded the established objectives. It was a pleasure to work with her and we were impressed with what she accomplished while she was at UPIN.

During the internship period we had the opportunity to exchange ideas regarding the technology transfer process applied within UPIN; Rosemary quickly understood our way of working and took a hands on approach, quickly identifying several of our technologies she was interested in working with.

Specifically, she reviewed several invention disclosures in the field of life sciences, and took the initiative in analyzing the patent landscape for these technologies, while at the same time providing us with helpful insights into specific aspects of the technology commercialization

process. She also dedicated her time to evaluating the market potential of several technologies and followed up this activity by organizing meetings between industry representatives and inventors.

In addition, Rosemary showed an interest in understanding Portuguese incubators throughout her time here. This action reinforced the connection between Portuguese innovation actors and IC<sup>2</sup> (her organization of origin), several opportunities of collaboration between Portuguese incubators and the IC<sup>2</sup> Institute were explored. By presenting IC<sup>2</sup> and The University of Texas to PhD students during a training session at the Faculty of Pharmacy she also showed her dedication in increasing our understanding of the U.S. market and culture. Overall, we had a great time with Rosemary and realized that the reverse internship program represents a great opportunity to exchange experiences, and most importantly to provide us with an insight into how we can improve our technology transfer Activities.

## 2.3 Research: Int'l Business Development

The creation of new companies is one of the most important drivers of the global economy. According to recent studies by the Kaufmann Foundation and U.S. Census Bureau, without the jobs new companies create, yearly employment growth would be negative. In order to explore the important role that business incubators and analogous associations play in the creation of new companies, a team of researchers from the IC<sup>2</sup> Institute at The University of Texas at Austin is conducting an interview series in tandem with an online survey that collects data from twelve incubators and related

Rosemary French, Keela Thompson, (left) and the IC<sup>2</sup> Travel Gnome collected data from Inova-Ria, an association of companies for an innovation network in Aveiro (2012). They are shown here with Director António Teixeira and Inova-Ria staff, including Marlos Silva who was a UTEN International Intern 2009-2010.





associations across Portugal. In addition to the data collected in Portugal, this multi-disciplinary study analyzes comparative data from incubator networks in several other countries around the world that are affiliated with the research unit of the IC<sup>2</sup> Institute at The University of Texas at Austin.

Under the supervision of Drs. Gregory Pogue and Art Markman of the IC<sup>2</sup> Institute, Research Associates Keela Thomson and Rosemary French are initiating this project in Portugal by conducting a series of on-site interviews with incubators, accelerators and their member companies. Discussions will explore business networking behaviors and how the entrepreneurial climate in Portugal plays a role in the ways in which these companies are able to conduct business. The planned outcomes for this study are to: (1) assess best practices for fledgling companies to leverage professional business contact networks; (2) enhance the ability for innovation and commercialization programs in Portugal to create business networks that address region-specific strengths to meet region-specific challenges; and (3) publish these findings in a peer-reviewed research journal to disseminate knowledge on Portugal's incubation and acceleration landscape and strategies.

In addition to providing these findings in a publication, the outcomes of this study will be incorporated into future UTEN initiatives in order to address the regional needs of Portugal in the area of technology-based startup company creation, growth, and expansion to international markets.

## 2.4 TechPortugal

TechPortugal.com is a public online site that presents the UTEN Technology Portfolio – a widespread UTEN effort that provides a central repository of Portuguese technology profiles to promote these technologies and to help brand for Portugal as a provider of quality science and technology. Technology profiles were prepared from:

- Interviews by UTEN staff
- RapidScreen evaluations
- MarketLook assessments.

A graduate research team from Instituto Superior Técnico (IST) produced a study on the contents at TechPortugal in 2008-2009. This team conducted 23 site visits to develop in-depth profiles of these Portuguese ventures and their technologies. Their analysis documented 98 early stage ventures and 42 mature ventures. (Details of this study are available in the UTEN 2008-2009 Annual Report.)

Today 162 technologies are listed at [www.techportugal.com](http://www.techportugal.com). These technologies represent a range of industry sectors as well as a broad spectrum of Portuguese institutions. Tables 2.4 and 2.5 summarize the technology types and institutions represented in the portfolio. One purpose of the online site is to help secure international interest in commercializing these technologies, and the contact feature of the site has produced positive results.

Technology-based companies created in Portugal in recent years as spin-offs of the science system are considered to be one of the main structural changes of the national economy, with about 70% of the new companies operating in sectors of high-technology industry and services. These new companies have also contributed to the growth of private sector R&D since 2005 and continue to expand their impact each year. Analysis also shows that the presence of universities generates positive externalities, both through the performance of knowledge-generating R&D activities and the education of specialized human capital. Firms can cultivate relationships with universities, participate in research consortia, and partner with academics who are performing related scientific work. Fresh graduates provide important channels for disseminating the latest knowledge from academia to the local industry. Founders are highly likely to start their ventures in the region “where they live.” Therefore, as universities and other research institutions, create and/or attract new talent, they can increasingly become important focal points for regional economic development.

## 2.5 In Situation Training at IPN

The purpose of UTEN In-Situation Training is to transfer the lessons learned in the UTEN program into operational practice in Portuguese institutions. The process begins with an assessment of 1) the institution's needs and 2) the UTEN training received by the staff, so that a highly-targeted plan can be developed. Then, a UTEN staff member spends time on-site: helping the office to translate knowledge into practice. High focus is placed on refining the office's ongoing processes and detailed procedures. The goal is to help increase the value of day-to-day operations at every phase.

Instituto Pedro Nunes (IPN) is a recognized leader in incubation of Portuguese ventures. At any given time at IPN's facility in Coimbra, the PIN staff provides physical incubation services to 30 ventures, plus virtual incubation (start phase) services to 45 start-up companies. Graduate and current IPN member companies include *FeedZai* ([www.feedZai.com](http://www.feedZai.com)), *Take the Wind* ([www.takethewind.com](http://www.takethewind.com)) and *YouBeQ* ([www.youbeq.com](http://www.youbeq.com)). IPN was interested in refining their business planning model for companies in the startup/launch phase. Specifically, they wanted to deploy a rapid business planning model, and were considering several well-known models for implementation.

Working with IC<sup>2</sup> Institute staff, they chose to incorporate the *Business Model Canvas* method, including use of the [LeanCanvas.com](http://LeanCanvas.com) web site. Since the Canvas methodology does not include specific techniques to ground business plans in the primary research of market realities, it was decided that training would also implement the MarketLook method, to gather market information to inform the rapid business planning process. Beyond the short-term impact of the training, the effort has the potential to create a common vocabulary and approach among the Portuguese entrepreneurial community at IPN. In IPN's culture of idea-sharing and of constructively critical review,

**Table 2.4 Tech Portugal Entries by Institution**

Institution	Entries
Critical Software	7
INESC Porto	1
Inovisa	2
Instituto De Medicina Molecular	5
Instituto Superior de Engenharia do Porto	1
IPN	4
IST	11
Tagus Park	2
TecMinho	13
University of Algarve	5
University of Aveiro	17
University of Coimbra	1
University of Evora	1
University of Lisbon	7
University of Porto	39
UNL	2
UPTEC	9
UTAD	4
Other	31

**Table 2.5 Tech Portugal Entries by Sector**

Institution	Entries
Aerospace	2
Aquaculture	1
Bioscience	26
Ceramics	1
Chemicals	2
Composites	1
Education	1
Energy	4
Finance	1
Food and agriculture	7
Computer imaging	1
Manufacturing	6
Materials science	8
Mechatronics	2
Medicine	21
Microelectronics	5
Nanotechnology	2
Pharmaceuticals	2
Software	28
Telecommunications	4
Other	37

TechPortugal presents the UTEN Technology Portfolio online, [www.techportugal.com](http://www.techportugal.com).

**Welcome to the UTEN Technology Portfolio**

Our portfolio contains technologies and technology-based companies who are working with UTEN, or with UTEN partner institutions in Portugal. To inquire about these technologies, submit the inquiry form you will find on the technology's web page, or send email to [info@techportugal.com](mailto:info@techportugal.com).

**Technology Portfolio**

Name	Sponsor Institution	Inventor	Primary Industry
A process to agglomerate wood particles to produce wood particle boards	Universidade de Trás-os-Montes e Alto Douro	Claro, João Almeida	Furniture
ANIMAL SPECIES IDENTIFICATION USING MITOCHONDRIAL DNA	University of Porto		
ActiveSpace -- space and ground-related software and systems	Instituto Pedro Nunes	Patrício, Ricardo	Software
Additive for Solefish Food	University of Algarve - CRIA (TTO)	Canário, Adelino	Aquaculture
Affinity of Drugs Toward Specific Lipids	Instituto De Medicina Molecular	Ribeiro, Marta	
Alert-Online		de Azeredo, Maria João	Software
Alfama -- Small-Molecule Drugs for Inflammation Diseases		Arantes-Oliveira, Nuno	Bioscience
AuditMark -- Solutions in web campaign auditing and analysis	UPTEC	Ribeiro, Rui	Software
BIOALVO S.A. -- Robotics technology for drug testing	University of Lisbon	Vieira, Helena	Bioscience
BULLPHARMA -- Pharmaceutical auctions for generics	DNA Cascais	Pereira, Paulo	Pharmaceuticals
BaseTec -- Patent bioinformatics	University of Porto	Borges,	Bioscience

**Technology Summary**

[Return to Portfolio](#)

**A process to agglomerate wood particles to produce wood particle boards**

This is a technology to speed the production, lower the cost, and expand the supply base for wood slab manufacturers while addressing the new E.U. regulation to remove by 2012 all formaldehyde from the wood slab manufacturing process.

In the current manufacturing processes, wood slab manufacturers purchase low-quality lumber, appropriate machinery, and formaldehyde. They crush the lumber and use the formaldehyde in agglomeration to create a high-quality slab with an appealing appearance. However, formaldehyde is a cancer-causing agent and the EU has banned the use of formaldehyde in this process by 2012. Manufacturers must find new agglomerants to manufacture wood slabs.

This technology is a process to create wood slabs (wood particle boards) using a new agglomerant. The chemical used in this process is an di-isocyanate, which does not have cancer-causing properties. The manufacturing process needs less temperature and also can result in a higher quality wood slab that is less likely to break and is more water resistant. The new process allows using different sources of wood, including sawdust, pine bark, and larger trees. It also yields equal quality wood slabs when using eucalyptus, the current second choice of lumber when small pine tree lumber is not available.

The technology is available for license to wood slab manufacturers. The owners also seek support for development and sales of machines and associated services to wood slab manufacturers worldwide.

A Portuguese national patent has been issued on the process for manufacturing slabs using di-isocyanate as the agglomerant. The patent has progressed to the PCT national phase. A large wood slab manufacturer in Portugal has successfully tested a prototype and has shown interest in licensing the technology.







UTEN managers Greg Pogue and Jim Vance with BIOALVO founder and CEO Helena Vieira (2012).

identified, among them anti-wrinkle, anti-oxidative, anti-infectious, collagen production induction, anti-inflammatory, anti-UVA & UVC, anti-aggregation and anti-neuroinflammation.

#### ***Marketplace Research***

The IC<sup>2</sup> Institute's US Connect team worked with CEO Helena Vieira and her team targeting data that would leverage BIOALVO's distinctive capabilities to gain U.S. market entry, establish a prominent foundation, and accelerate acquisition of new contracts. The team contacted industry leaders and mapped out the most prominent intersections of BIOALVO's capabilities with industry needs.

#### ***Market Hurdles***

Prospective clients consistently expressed initial interest. However (as is often the case with newer companies) overcoming prospects' low risk threshold – especially during an economic downturn – was challenging, even for a company with BIOALVO's promising resources and talented staff. Prospects commonly expressed the desire that BIOALVO bring them ingredients, developed from bioactive extracts with already-identified activities, clinically tested and scaled-up.

#### ***Commercialization Strategy***

Without a product already in the market with which to draw objective proof that BIOALVO's marine extracts can be developed into ingredients having the desired properties, BIOALVO needed another means of bridging their prospects' uncertainty gap. The US Connect team and BIOALVO went to work finding empirical evidence from BIOALVO's own research as well as the applicable research of others on Portuguese marine extracts, that would establish efficacy of

BIOALVO's discovery platform and source of bioactives. A new, more robust presentation was created. Proctor & Gamble's Director of Open Innovation reviewed the presentation, contributing buyers' perspective, issues to address, and presentation impact. He arranged to have BIOALVO present to P&G's Therapeutic Skin Care R&D group, who provided additional insights.

#### ***Prospective Customers***

Pharmaceutical, cosmetic, skin care, and food industry companies were contacted, and meetings established with Merck's Global Head of Therapeutic Skin Care R&D, the heads of skin care research at Avon, Revlon and Mary Kay, the R&D team of Kerry Group, a leader in food ingredients and flavors, as well as remote meetings with Proctor & Gamble's Skin Care group, L'Oreal, and others.

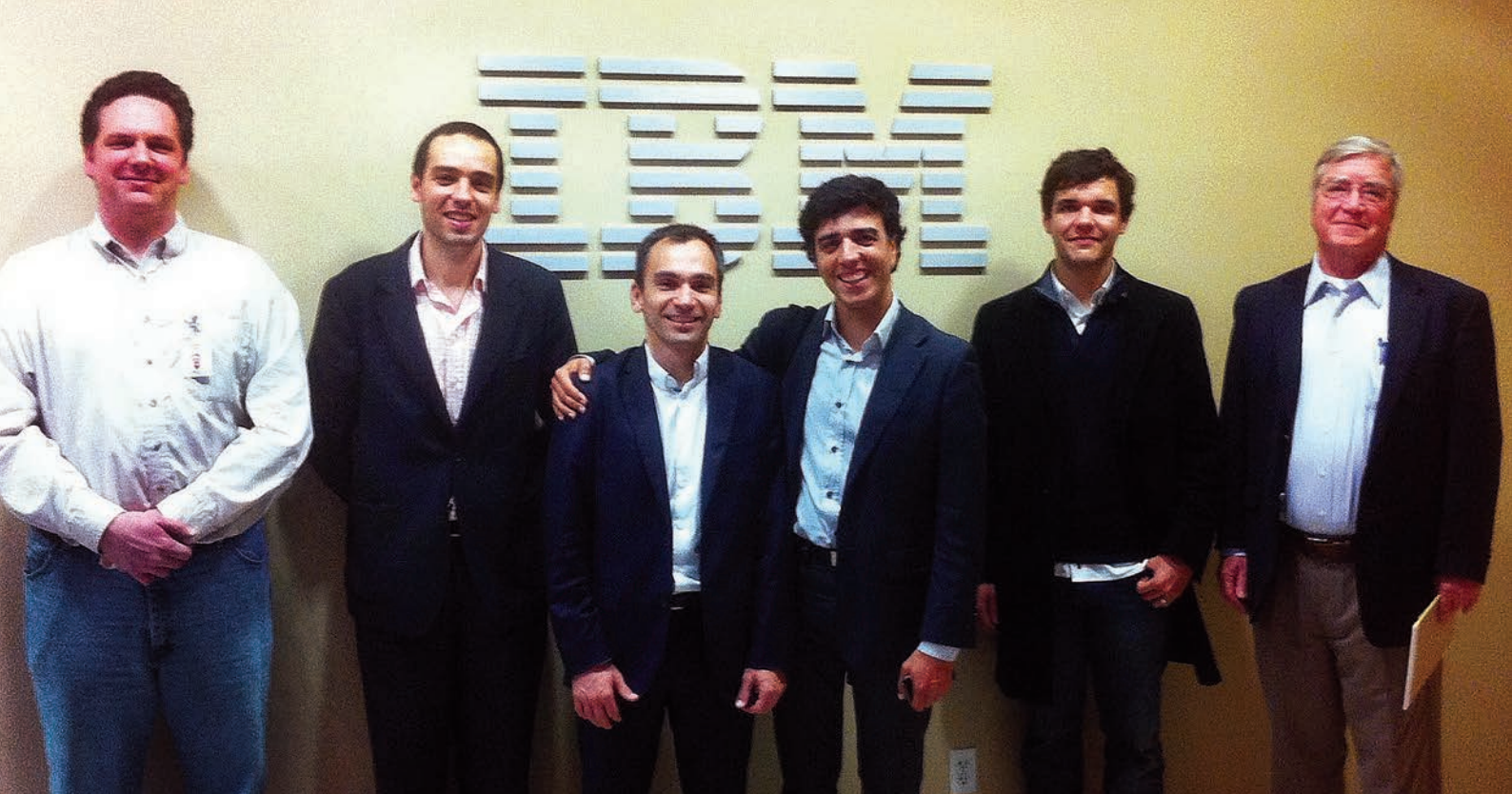
#### ***Results***

One contract has been signed, two other contracts are under review with signing expected soon, and L'Oreal Europe has begun discussions with BIOALVO.

AlphaVektor, a U.S. pharmaceutical and specialty product development company recently acquired from Bioalvo the development and posterior use rights of extracts for pathologic treatment of a metabolic disease. AlphaVektor's CEO, John Koleng, stated: "We were very impressed with the potential applications of BIOALVO's novel extract library in various types of products and indications. We believe the combination of the material source combined with the unique chemistry afforded by the extracts will provide advanced products to address unmet market needs."

Avon Products Inc., the world's largest direct seller of cosmetics and skin care, agreed to BIOALVO's proposal





Marco Bravo, UTEN Project Director, and Robert Peterson UTEN Project Principal Investigator, attended a business meeting they helped secure at IBM for the founders of the Portuguese startup FeedZai (2012).

and is in the process of approving their contract. Avon will obtain access to certain extracts from BIOALVO's PharmaBug Library for development of topical applications that achieve particular cosmetic effects. Avon has agreed to share the results of its research with BIOALVO and will have certain rights to acquire exclusivity of successful extracts and subsequently rights to commercialize certain extracts. Avon has more than \$11 billion in annual revenue produced by more than 6 million active independent Avon Sales Representatives in more than 100 countries. More products carry the Avon name than any other brand in the world.

Another global leader in cosmetics has agreed to BIOALVO's proposal and is reviewing a contract for the development of new cosmetic and skin care products. The company initially desires to evaluate samples that show potential for topical applications, from BIOALVO's PharmaBug collection sourced from the deep sea of the Extended Portuguese Shelf.

*We were overwhelmed by the competencies, dedication and scope which the US Connect staff showed to us. Not as mere spectator, but deeply involved, demonstrating tremendous availability to help... US Connect contributed decisively to the definition of BIOALVO's internationalization strategy into the U.S. market by helping us craft final presentation materials, training me and my team into the necessary skills to approach the American market and providing mentoring to me through the toughest moments on this path. US Connect went one step further, by continuously searching for potential new clients for BIOALVO's technology and libraries, preparing the necessary introductions, being present in all initial discussions and providing BIOALVO a sort of quality stamp with US Connect association. (Helena Veira, CEO BIOALVO)*

## **FeedZai: US Connect Case Study**

### **Company & Product**

FeedZai (Nuno Sebastiao, CEO) creates software solutions for business and operational processes that require sub-second analytics over big data. FeedZai's Pulse is a business intelligence appliance that enables real time processing and analytics of large scale high throughput data loads. Its strength is its real-time processing and analytics of selected key performance indicators on any number of monitored items, while continuously comparing them against historical, baseline, targeted performance, and external data. This enables Pulse to provide unusually accurate and immediate identification of trends, uncover and manage business anomalies, control costs and risks, and predict future values with enhanced precision. These capabilities are especially helpful catching fraudulent financial transactions prior to authorizing even the first fraudulent purchase, forecasting energy production and consumption, and enabling online shopping recommendation engines to finally offer purchase suggestions accurately tailored for each individual shopper as they shop.

### **Marketplace Research**

The US Connect team contacted electric utility companies, renewables power producers, grid operators, IT solution providers, and companies in business intelligence, payment authentication, and customer experience analytics.

The world is deluged with IT applications, each proclaiming to provide superior intelligence, control, speed and ease. FeedZai's claims of its event processing engine Pulse were complex, immense and pervasive: an IT departments' "perfect storm" for casting skepticism and quick dismissal. Except in this case, FeedZai's

claims were real. FeedZai needed a communication that could present Pulse's potential in a way that could be readily grasped, which would impart confidence in the product's ability to solve pressing business needs.

The IC<sup>2</sup> Institute's US Connect team worked with FeedZai CEO Nuno Sebastiao and his team to: 1) communicate Pulse's robust capabilities and benefits to non-technical personnel; and 2) build prospects' confidence for Pulse to meet their organization's needs.

### **Commercialization Strategy**

Case studies were chosen as the communication vehicle. They would develop one case profile for each of the three targeted industries determined to have the greatest "pain" that Pulse could alleviate. Empirical data was collected from interviews with Pulse's pilot customers and compared to their historical performance as well as published industry data of similar companies. Industry experts were interviewed to determine direct and indirect financial losses attributable to not having the intelligence and control Pulse provides. Non-industry individuals added fresh eyes in shaping each case study so non-technical decision makers would understand and appreciate the impact of Pulse. The case studies now provided technical experts an effective means of conveying Pulse's potential impact on business operations, profitability, and future growth to internal decision makers.

### **Prospective Customers**

Meetings were set with Adobe, CallSpace, Cardinal Commerce, ERCOT (Texas' electric grid operator), IBM Industry Solutions Group, Intel Capital, NirvanaSystems, Omniture, Patton Boggs, St. David's Neuro Texas Institute, TeaLeaf, Vestas Wind Turbines, Austin Technology Incubator, and several groups at Dell including Dell's Financial Services, Security & Systems Management, Chief Technology Office, Next Generation Computing Solutions, Business Intelligence and Customer Relationship Management. Pulse information was also reviewed by Accenture, Hewlett Packard's CIO, PayPal, Symantec and XremePower. Most presentations were made to the organization's CIO, VP, or senior manager responsible for this area.

### **Results**

US Connect is working with FeedZai and Cardinal Commerce to complete a contract for a Phase 2 installation of Pulse to begin early 2013. Cardinal Commerce is a global leader in enabling authenticated payments and secure transactions for many of the world's largest retailers, financial institutions and service providers. Although not a large company, successful implementation with them will open formidable opportunities with Cardinal's chief clients: the financial, retail, and payment services institutions that stand to gain the most from Pulse's real-time fraud prevention. Cardinal's Vice President of Enterprise Services stated he's a big champion of Pulse.

Mr. Eric Drummond, a partner at Patton Boggs' Energy & Clean Technology, arranged for Mr. Sebastiao to be a

guest presenter at the Global New Energy Summit held this past April. Mr. Sebastiao was introduced to several key energy and venture capital leaders in Colorado, Texas and Washington D.C. Mr. Drummond also arranged to showcase FeedZai and Nuno at the Cleantech Fellows Institute (CFI) Conference in October. CFI is partnering with VCs and the Department of Energy's National Renewable Energy Laboratory.

IBM Industry Solutions Group would like to develop a joint pilot utilizing Pulse, with any major utility company. IBM must first complete the other components of their utilities solution platform before they can proceed with FeedZai.

*The US Connect team for the last months supporting FeedZai in its commercialization effort into the U.S., has been supportive of FeedZai and, in particular, has devoted time and diligence to accompany us to the number of meetings arranged for FeedZai with companies such as Dell, IBM, or Adobe. For this we are very grateful. (Nuno Sebastiao, CEO FeedZai)*

### **Sonicability & GimmeDaBlues: US Connect Case Study**

GimmeDaBlues, by Sonicability, is an application for iOS devices (iPod, iPhone, iPad) that allows its users to generate Blues in real time and in several known styles for a quartet of trumpet, piano, double bass, and drums.

The user plays the quartet with different degrees of control over the four instruments. Some instruments have a more or less autonomous behavior while others are totally dependent on the user actions. The bass and drums have a pretty autonomous behavior that slightly changes according to how the user is "playing" the piano and trumpet. Touching the screen of the user interface plays the piano and trumpet, which provide and idiomatic accompaniment and solo in the chosen Blues style.

The user can control the articulation and melodic profile of the solo instrument by moving the fingers over the trumpet, and control the articulation of the accompaniment as well as register and chord distribution by tapping over the piano. All user actions translate into musical behaviors that are idiomatic since the instruments played by the user (piano and trumpet) know about the Blues style: whatever the user plays sounds nice and idiomatic. GimmeDaBlues thus implements an intelligent layer between the user actions and its musical consequences. This establishes a new paradigm in music applications for smartphones, as users can play and interact at a high musical level without formal musical knowledge.



*The User Interface*





Means Elementary School, Harlingen, Texas: Schoooooools.com CEO Ademar Aguiar (center) with teachers, Principal Elizabeth Maldonado (back row, 3rd from left) and University of Texas at Austin IC<sup>2</sup> Institute Program Manager Cliff Zintgraff (2011).

This application can be used in at least three ways: as a musical application in which a user can play Blues in a Jazz quartet (<http://vimeo.com/35743843>); as a “comping” tool in which the user can accompany and interact with a soloist (<http://vimeo.com/31607650>); as a study tool for Jazz students who need to practice the Blues form in several styles, keys and tempi.

Other features of the performance, such as key, tempo, instruments (piano and Hammond organ, three different types of trumpets) can be defined in the setup page of the application. The performances with GimmeDaBlues can be recorded in the form of a MIDI file that can be later on uploaded to a MIDI sequencer or notation program in order to be further edited.

GimmeDaBlues was conceived and prototyped under the scope of the UT-Austin Portugal program, by Rui Dias, Carlos Guedes, George Sioros, Telmo Marques and Gilberto Bernardes, it was programmed for iOS by Amaury Hazan, and the GUI design is by Clara Morão.

### Results

GimmeDaBlues has recently been promoted at the SIGGRAPH conference in Asia. US Connect has helped Sonicability to incorporate in the United States and is currently assisting pursuit of Apple Store distribution for this musical app.

### Tecla Colorida: US Connect Case Study

Tecla Colorida (Ademar Aguiar, CEO) is based in Porto, Portugal. The platform known as Escolinhas is in 200 primary schools in Portugal. In addition, it is now in its first school in the U.S. – being piloted in six classrooms

in Means Elementary School in Harlingen, Texas. Marketed in the United States as Schoooooools.com, the company’s platform for multimedia learning in grades 1 – 6 provides official school web spaces to support collaboration, communication, and sharing of school content and activities between students, parents, and teachers. In the classroom, students create multimedia documents that supplement current lesson plans. The Schoooooools approach helps elementary students develop critical thinking, teamwork, and creativity, to prepare them to compete in the 21st Century economy. In addition to this pilot program, Schoooooools.com CEO Ademar Aguiar has started strategic partnership discussions that will advance sales and support in the United States.

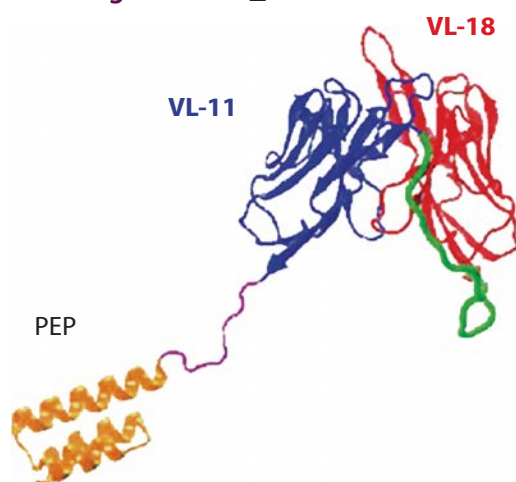
*It is really difficult to introduce a new product, especially in the elementary school market. The energy to continue with this marathon comes from many sources, like opinions gathered after a long session with teachers. Thank you for sharing your enthusiasm. Let’s make rain!* (Ademar Aguiar, CEO Tecla Colorida).

### Technophage: US Connect Case Study

TechnoPhage S.A. is a biopharmaceutical company engaged in research and development based on recombinant single domain antibody fragments (sdAbs), for the diagnosis and treatment of human diseases. TechnoPhage has created TechnoAntibodies as an independent offering in the sdAbs space by exploiting the variable regions of either the heavy (VH) or light (VL) chains of rabbit-derived antibodies. The structure and extreme stability, solubility and tissue penetration properties of sdAbs enable them to engage therapeutic

targets that are inaccessible to conventional antibodies. The overall strategy of TechnoPhage is to generate novel therapeutics in early phases of development and to subsequently enter into partnering deals for preclinical and/or clinical development. They have the necessary equipment and talent readily at hand to develop full product solutions. TA\_101, an antibody fragment that inhibits tumor necrosis factor alpha (TNF- $\alpha$ ) in systemic inflammation, is Technophage's lead product. TA\_101 is a recombinant single domain antibody fragment in a dimeric form that has 2 different binding domains that facilitate effective TNF- $\alpha$  inhibition (figure 1). Inclusion of an albumin binding peptide (PEP) in the product extends the half-life to potentially allow once monthly self-administration. TA\_101 has been produced in microbial systems to date.

**Figure 2.1 TA\_101 structure.**



*VL-VL dimer linked by a peptide linker. The fact that two different binding domains are used facilitates effective TNF- $\alpha$  inhibition. Half-life extension obtained by PEP, an albumin binding domain.*

US Connect supported the commercialization of TechnoAntibodies and TA\_101 in particular through developing summary data sheets detailing the technology and lead product as well as Powerpoint overviews of the opportunity. Introductions were made to several top pharmaceutical companies including the Sanofi group, Amgen and Eli Lilly. Technophage was invited to make a presentation to a multi-site team composed of Eli Lilly and Imclone scientists. Great interest was expressed in the technology and lead, yet the bias in large pharma companies is to license products with clinical data that supports safety and efficacy. At the same time, this commercialization strategy fits with Technophage's goal to build value in TA\_101 through early clinical development and then capture higher return in licensing negotiations. Now, many leading biotech/pharma companies are aware of the technology and product which can be exploited for expedited discussions as new data comes available.

As Technophage sought to move TA\_101 into clinical development, alternative production systems were sought to provide improved cost and scale advantage. US Connect introduced Technophage to a U.S.-based contract manufacturing organization that specializes in

the biomanufacturing of recombinant drug products. This interaction led to a Type 3 US Connect deal where in-kind services were provided by the U.S. company which conserve significant cash for Technophage. Specifically, the U.S. company developed expression constructs, tested recombinant protein production and performed initial purification work to provide samples to Technophage free of charge. The quality of the produced materials is under review by Technophage and early discussions are underway between the two companies for potential collaborations to produce clinical-grade material to support human trials.

## WS-Energia: US Connect Case Study

### Company & Product

WS Energia, Inc. (João Wemans, Founder & Senior Developer) was founded in 2006 and is headquartered in Porto Salvo, Portugal. Improvement of photovoltaic (PV) systems was the basis of the company's launch. They offer a range of solutions in solar trackers, inverters and photovoltaic modules. Their *Horizon* single-axis photovoltaic solar trackers have been in operation for more than four years in 150 sites. João Wemans is both WS Energia's Founder and Senior Developer.

A good single-axis tracker can increase the energy yield of most PV panels 20%. As a tracker rotates on its axis, heavy structural members holding 40 or 80 PV panels must rotate on one another, producing significant friction and wear as well as stress on motors. WS Energia addresses this issue with a proprietary low-friction material that is largely responsible for their 80 panel tracker requiring just one motor versus two to four on many competitor systems. This single motor design 1) results in reduced foundation requirements and the associated energy-sapping shadowing effects, and 2) features pre-installed sensors and robotics. This translates to one of the most cost effective solutions available.



### Marketplace Research

Research was undertaken to validate the competitiveness of WS's tracker technology against current marketplace requirements, hurdles to market entry, demand, projections, and trends in solar trackers and the solar energy industry. Industry and regulatory experts, solar park developers, distributors, and competitors were interviewed. One of these was the founder and CTO of SunPower, whose knowledge of PV design and the industry is extensive. SunPower manufactures utility scale trackers and is one of the fastest growing companies in the United States. The US Connect team identified distribution channels, buyers, tracker decision entry point of purchase cycle, regulatory requirements, and outlined a strategy to leverage WS's distinctive strengths



toward capturing the target market. WS's founder, João Wemans, provided the data needed to address the many questions posed by experts.

*Future Demand of Solar Trackers:* A common misconception is that as PV energy yields improve, the advantages of solar trackers will diminish. The Director for Solar Platforms & Tracking for SunEdison stated just the opposite: good single-axis trackers increase the energy yield of most PV panels 20%. A 20% increase of a 10% efficient panel effectively increases its yield to 12%, but increases the yield of a 20% efficient panel to 24%. The 4% additional yield was gained at the same cost as the 2% gain. As PV energy yields improve, solar trackers become one of the most cost effective means of achieving parity between solar and fossil fuel electric generation.

### **Commercialization Strategy**

Price drives the energy industry. WS's advantage over other trackers was not a significant technological breakthrough, however their low manufacturing costs proved to be very aggressive. Leaders in the industry confirmed WS's price point was quite attractive and they would be interested in using them for upcoming projects, provided they meet U.S. regulations and could be relied upon to last at least the 20-year lifespan expected of PV panels. US Connect recommended an entry strategy that initially focused on partnering with solar farm developers and PV solution providers, as opposed to solar equipment distributors or PV equipment manufacturers. Solar equipment distributors add a percentage to the cost for their commission or fee. If WS's price on a tracker was \$.38/watt, the distributor's price to a solar developer may be \$.42. That \$.04 difference calculates to an additional \$4,000,000 expense for a 100MW farm. Solar farm developers, on the other hand, deal directly with utilities or businesses. They are primarily concerned with two things regarding trackers: will they perform as needed, and will the cost help them win the bid. The US Connect team supports this market approach to help WS establish a long term supplier relationship rather than a single-event sale.

### **Prospective Customers**

The President & CEO of Ignite Solar in Houston, Texas designs and builds solar projects then sells the electricity to utility companies. Ignite is not partnered with anyone for a ground mount tracker. The CEO stated that WS's solar tracker may meet the price point they need and was about to submit RFPs for five solar parks in California and Mexico's largest solar farm. They were targeting a very aggressive tracker price of \$.36/watt to provide the best possibility to win these bids and were willing to consider WS trackers.

SunEdison in Denver, Colorado, is a global leader in delivering solar power, with manufacturing plants and offices around the world. SunEdison's Director for Solar Platforms & Tracking stated if WS trackers could be priced below \$.40/watt, SunEdison would be interested in discussing use of them. Other companies US Connect contacted include Texas Solar Power

Company, Suniva, Inc., Patriot Solar Group, SunPower Corporation, Southwest Solar Technologies, Inc., and Epiphany Solar Water Systems.

### **Results**

On review of US Connect recommendations, the WS Energia board decided to first seek a European industrial partner to help them manage their expansion to the U.S. market, via the US Connect approach. *WS Energia believes that the approach [US Connect] presented is the most suitable for U.S. entry, for all the strong reasons you state... next steps should be to send the tech teaser to prospective clients.* (João Wemans, Founder and Senior Developer). As of this report, WS was addressing regulatory hurdles, warranty terms and collection of evidence regarding longevity and reliability: all items revealed as especially important for U.S. market entry.

## **2.7 UTEN Conference 2011**

*The role of S&T in transforming the economic fabric: Emerging challenges & opportunities for global technology transfer & commercialization*

*Faculty of Engineering, University of Porto Nov. 14, 2011*

"What challenges do technology-based entrepreneurs face in the current context of the global financial crisis?" This theme set the tone for the 2011 edition of the UTEN (University Technology Enterprise Network) Annual Conference. This event gathered entrepreneurs, investors and CEOs, both Portuguese and foreign, together with researchers and practitioners in technology transfer. The aim was to discuss the scenarios and challenges that the global financial crisis bring to technologically based entrepreneurs. Another key goal of the conference was to improve the understanding on related emerging opportunities in times of special financial constraints at a global scale. Some of the topics discussed at the conference were:

- What skills should a technology-based entrepreneur have?
- How to attract investors in the early stages
- The challenge of the first investment cycle
- How to attract investors in the growing stage
- Planning and implementing strategies for technology-based companies
- Professionalizing technology transfer and commercialization in the international context

The keynote speaker of Panel I, "Emerging challenges in technology transfer and commercialization", was Rick McCullough (Vice-President of Research and Lord Professorship of Chemistry at Carnegie Mellon University, USA). This first panel discussed technology transfer and commercialization as increasingly important elements in the economic and social fabric. Not only do they lead to the launching of technology based start-ups, but they also generate skilled employment, increase exportations and have become a source of income for universities.



UTEN Conference 2011: Ana Rita Romígio and Sofia Varinho participated in the Round Table discussion *Career development in technology transfer and commercialization in Portugal*, moderated by José Mendonça (far right).

The 2011 UTEN Conference also focused on the challenges and the opportunities for career development in the technology transfer and commercialization field. Panel II featured Søren Hellener (Director of Research & Innovation at Denmark's Technical University) as keynote speaker. A Round Table discussion included testimonials from several Technology Transfer Officers. Another conference theme was the skills that a technology-based entrepreneur should have, a theme that was discussed in Panel III, with Manuel Cendoya (Founder of San Sebastian Technology Park, Spain) as keynote speaker. How to attract investors in the early stages was the theme of Panel IV, with Tara Brandstat (Associate Director at the Center for Technology Transfer and Enterprise Creation (CTTEC), Carnegie Mellon University, USA) as keynote speaker. Finally, Panel V discussed How to promote exit strategies. The keynote speaker was José Epifânio da Franca (IST, Founder and CEO of Chipidea).

The conference program presented Portuguese company case studies, such as BIOALVO, Advanced Cyclone Systems, and Chipidea, which illustrate a successful technology transfer and commercialization of Portuguese science to foreign markets.

Francisco Larios Santos (Deputy General Director for European Programs, Spanish Ministry of Science and Innovation), Belmiro Martins (General Director of Research and Innovation, European Commission) and João Sentieiro (President of the Foundation for Science and Technology) were some of the most important participants. The Rectors of the Universities of Porto, Algarve, Beira Interior, Minho and, finally the Nova University of Lisbon, whose director is also the President of the Council of Rectors of Portuguese Universities (CRUP), also participated in this event.

The 2011 UTEN Annual Conference took place in co-location with the *Iberian Expert Workshop: Strategic Approaches for Knowledge Transfer and Intellectual Property Management from Universities and Public Research Organisations* organized by the European Commission. The morning session of the UTEN Conference and the workshop took place jointly; in the afternoon, both events proceeded in separate and parallel sessions.

### Conference Program

- Opening Session
  - » José Manuel Mendonça, UTEN Scientific Director, President of INESC Porto
  - » Sebastião Feyo de Azevedo, Director of the School of Engineering, University of Porto
  - » João Guerreiro, Rector, University of Algarve
  - » Robert Peterson, Associate Vice-President for Research, University of Texas at Austin
  - » Francisco Larios Santos, Deputy General Director for European Programs, Spanish Ministry of Science and Innovation
  - » José Carlos Marques dos Santos, Rector, University of Porto
  - » António Rendas, President of the Council of Rectors of Portuguese Universities
  - » João Sentieiro, President of the Foundation for Science and Technology
- Panel I: *Emerging challenges in technology transfer and commercialization*
  - » Moderator: João Guerreiro, Rector, University of Algarve
  - » Keynotespeaker: Rick McCullough, Vice-President of Research and Lord Professorship of Chemistry at Carnegie Mellon University, USA
  - » José Mendes, Vice-Rector of Innovation and Entrepreneurship, University of Minho



- » David Gibson, Associate Director of IC<sup>2</sup> Institute, UT Austin
- » Luis Mira, President of Inovisa, Technical University of Lisbon
- Panel II: *Professionalizing technology transfer and commercialization: challenges and opportunities for career development*
  - » Moderator: Robert Peterson, Associate Vice-President for Research, University of Texas at Austin
  - » Keynotespeaker: Søren Hellener, Director of Research & Innovation at Denmark's Technical University
  - » José Ricardo Aguilar, TTO, IPN and University of Coimbra
  - » Nuno Silva, TTO, ULInovar, University of Lisbon
  - » Aurora Teixeira, Professor at the School of Economics, University of Porto
- Round Table: *Career development in technology transfer and commercialization in Portugal*
  - » Moderator: José Mendonça, UTEN Scientific Director, President of INESC Porto.
  - » Maria Oliveira, UPIN (Internship at MIT/Boston University)
  - » Pedro Silva, TecMinho (Internship at the University of Texas at Austin)
  - » Ana Rita Remígio, UATEC (Internship at STTM)
  - » Sofia Vairinho, CRIA, University of Algarve (Internship at Carnegie Mellon/Cambridge Enterprise, UK)
  - » Luís Serina, FCT (Internship at the European Space Agency)
  - » João Simões, UC (Internship at Carnegie Mellon University)
- Panel III: *Skills for science-based innovation*
  - » Moderator: João Queiroz, Rector, University of Beira Interior
  - » Keynote speaker: Manuel Cendoya, Founder of San Sebastian Technology Park, Spain
  - » Case for discussion: Enrique Barba Ibanez, General Manager, B2B Division of CIRSA
  - » Helena Vieira, CEO and co-founder of Bioalvo
  - » Miguel Amaral, Professor, IST/IN+, Technical University of Lisbon
- » Jorge Figueira, TTO, University of Coimbra
- » Marta Catarino, TTO, TecMinho
- Panel IV: *The challenge of first round investments*
  - » Moderator: Carlos Pascoal Neto, Vice-Rector, University of Aveiro
  - » Keynotespeaker: Tara Brandstat, Associate Director at the Center for Technology Transfer and Enterprise Creation (CTTEC), Carnegie Mellon University
  - » Case for discussion: Pedro Araújo, CEO Advanced Cyclon Systems
  - » Daniel Bessa, General Director, COTEC
  - » José Paulo Rainho, TTO, UATEC, University of Aveiro
  - » Carla Mascarenhas, TTO, University of Trás-os-Montes and Alto Douro
- Panel V: *Designing and promoting exit strategies for technology based firms*
  - » Moderator: Sebastião Feyo de Azevedo, Director of the School of Engineering, University of Porto
  - » Keynotespeaker: José Epifânio da Franca, IST, Founder and CEO of Chipidea
  - » João Paulo Alpendre, CFO, BES Investimento
  - » Alexandra Xavier, TTO, INESC Porto
- Closing Session
  - » Moderator: David Gibson, Associate Director of IC<sup>2</sup> Institute, UT Austin
  - » Keynote speaker: Tony Boccanfuso, Director, University Industry Demonstration Partnership, USA
  - » Emídio Gomes, Pro-Rector, University of Porto
  - » José Bulas da Cruz, President of the School of Science and Technology, University of Trás-os-Montes and Alto Douro
- Closure:
  - » José Manuel Mendonça, UTEN Scientific Director, President of INESC Porto
  - » David Gibson, Associate Director of IC<sup>2</sup> Institute, UT Austin
  - » Belmiro Martins, General Director of Research and Innovation, European Commission
  - » António M. Cunha, Rector, University of Minho

João Sentieiro, President of the Foundation for Science and Technology, addresses UTEN Conference 2011.





Lorenz Kaiser with Fraunhofer Portugal presented *The Negotiation of Contracts* (2011).

## 2.8 Workshop: The Negotiation of Research Contracts

*University of Porto, December 14, 2011*

The workshop “The Negotiation of Research Contracts” ran in collaboration with Fraunhofer Portugal. The workshop focused on negotiating research contracts, helping universities face the challenge of forming collaboration partnerships and dealing with cultural issues in international cases.

Contract and collaborative research is without any doubt a key source of external funding for universities and research institutes. With increasing public budget cuts and in an open-innovation environment, the professionalization of this activity (university-industry engagement and negotiation of research contracts) is paramount to both parties: universities and industry. On one hand, university investigators face challenges in identifying appropriate strategies for making the necessary connections within industry and dealing with industry related cultural differences. On the other hand, industry researchers have similar issues in identifying appropriate strategies for engaging the right offices and individuals for making the necessary connections within institutions and dealing with their particular cultural differences.

The event took place at UPIN, the technology transfer office of the University of Porto on December 14, and was an opportunity to discuss with experts issues relating to the main concerns hindering the successful negotiation of research contracts and the crucial

points of negotiating non-disclosure agreements, R&D contracts and cooperation agreements with funding.

Three case studies were discussed; the first was on the crucial problems of non-disclosure agreements, the second addressed the Biotech R&D contract, which included the discussion of an offer based on the FhG standard R&D terms and conditions and a typical answer from the side of the industrial partner with a contradicting position to the Fraunhofer offer. The final case study was a discussion of the Cooperation agreement, based on the Lambert Modes contracts, with some dangerous legal “mistakes” in it.

### *Bio keynote speaker, Dr. Lorenz Kaiser*

Dr. Lorenz Kaiser is Division Director for legal and contractual affairs at Fraunhofer-Gesellschaft. He is responsible for the departments “Law,” “R&D Contracts,” and “Public Sponsoring,” rendering centralized services for the 57 Fraunhofer Institutes. He specializes in the development of models for research cooperations, negotiations, and contractual solutions, which also includes the transfer of knowledge through Spin Offs from Research facilities. Dr. Kaiser has 25 years of experience in negotiating contracts with industry and is a member of several national and international expert groups for Research funding and IPR questions. Dr. Kaiser also practices law privately as an attorney-at-law in his specialty. He gives lectures and seminars in the field of research contracts. His areas of specialization are: Contracting in Research and Development, Civil Law (especially Contract Law, legal questions of funding regulations, and EU law on Research and Development.





Marta Catarino, Director of TecMinho addresses the workshop, *Bayh-Dole Act: Opportunities for Portugal* (2012).

## 2.9 Workshop: “Bayh-Dole Act: Opportunities for Portugal”

*INPI, Campo das Cebolas, Lisbon, February 27, 2012*

“Bayh-Dole Act: Opportunities for Portugal” was the theme for the first UTEN Workshop 2012 that has run in collaboration with the IC<sup>2</sup> Institute of the University of Texas at Austin with support from the Portuguese Foundation for Science and Technology (FCT). The workshop focused on the history and implications of the U.S. Bayh-Dole Act for modern university technology transfer. The guest speaker for this event was Michael Barrett, a Partner with the international law firm Fulbright & Jawoski, L.L.P., who specializes in patent litigation, prosecution and analysis in various technology areas.

The event took place at the Instituto Nacional de Propriedade Intelectual (INPI) and was an opportunity to provide attendees with not only an international perspective on IP but also insight into the university’s role in both IP and technology transfer on a policy and practical level. The workshop was divided into three parts: “An American Perspective,” “A Portuguese Perspective,” and “Opportunities for Portugal.”

“An American Perspective,” began with opening remarks from Vasco Varela (FCT) and included a Keynote Speech by Michael Barrett. This was followed by comments from José Mendes (University of Minho) and Marco Bravo (IC<sup>2</sup> Institute, University of Texas at Austin). Telmo Vilela (INPI) then presented the “The Portuguese reality – challenges and opportunities” with comments from Heath Naquin (IC<sup>2</sup> Institute,

The University of Texas at Austin) and Maria Oliveira (UPIN, University of Porto Innovation).

Marta Catarino (TecMinho, University of Minho) opened the second part of the workshop, “A Portuguese Perspective” with her presentation on the “Perspective from a Technology Transfer Office.” This was followed by comments from Jorge Gonçalves (University of Porto) and José Paulo Rainho (University of Aveiro). Pedro Araújo from Advanced Cyclone Systems presented the “Perspective from a spinoff company,” with comments from Vasco Varela (FCT) and Pedro Vilarinho (COTEC). The third and final part of the workshop focused on “Opportunities for Portugal” and José Ricardo Aguilar (Instituto Pedro Nunes –IPN) was the first speaker. His presentation highlighted the “Key take-aways and opportunities for Portugal.” The workshop concluded with closing remarks from Leonor Trindade (INPI).

### *Bio Keynote speaker:*

Michael Barrett is with Austin's office of Fulbright & Jaworski L.L.P. He focuses on patent litigation, prosecution, and analysis in various technology areas. For example, he has experience in the electrical, semiconductor, imaging, telecommunications, computer hardware, computer software, mechanical, medical, software, nanotechnology, microfluidics, and chemical fields. His transactional experience includes all phases of prosecution, opinion work, and portfolio management. His litigation experience includes all phases of litigation up to jury-trial preparation, including pre-litigation analysis, pleadings, discovery, depositions, and court hearings.



## 2.10 Workshop: Streamlining Venture Capitalists and Business Angels

*Faro, May 21-22, 2012*

In collaboration with Carnegie Mellon University Portugal Program, UTEN Portugal held the second UTEN Workshop 2012, targeted at Technology Transfer Officers (TTO's) and start-up companies to increase awareness and knowledge surrounding the keys to successfully obtaining venture funding, particularly in the United States.

As the keynote speaker for the event, Robert Unetich presented his views on where to start to obtain Venture Capital (VC). Discussion included:

- Strategic Investor vs. Venture capitalist/Business Angel
- Venture capitalism in the United States
- Ways to approach a venture capitalist
- Company expectations for onshoring to the United States
- Risk vs. Return

The workshop also presented the experience of three Portuguese companies: MuchBETA, Actualsun and

Metablue and included a closed session entitled "Roadmap" to Assist TTO's and Start-up Companies in Raising Funds from Venture Capitalist/Business Angels. This event welcomed around 20 participants.

### *Bio Keynote speaker:*

Robert M. Unetich is a graduate of Carnegie Mellon with a degree in Electrical Engineering. He co-founded Information Transmission Systems Corporation (ITS) which was acquired by ADC Telecommunications, Inc. He became an Adjunct Professor at Carnegie Mellon, teaching Entrepreneurship and Engineering Economics. He went on to co-found Applied Electro-Optics, which was acquired by Accelight Networks. He was been awarded the regional SBA Entrepreneur of the Year Award and the Ernst & Young regional Entrepreneur of the Year award. He has been directly involved as a founder or lead investor in eleven startup companies. He holds two U.S. patents and has several patents pending, and has published numerous technical papers. He presently owns and operates a consulting firm known as GigaHertz LLC ([www.gigahertzllc.com](http://www.gigahertzllc.com)), an electronics and management consulting company located near Pittsburgh. He is an active member of several Pittsburgh based venture capital firms, including Pittsburgh Equity Partners, and he is an active angel investor.

Robert Unetich instructed UTEN participants regarding start-up funding, venture capitalists, and business angel investors,(2012).







José Mendonça presents UTEN as a model for success at the launch of KTFORCE. Participants included delegates from Germany, France, Ireland, Lithuania, and Romania.

## 2.11 UTEN as a Model for Success in the EU

Delegations from five European countries—Germany, France, Ireland, Lithuania and Romania—came to Porto to search for successful examples of innovation and technology transfer policies in a university environment. This visit took place March 1-2, as part of “KTFORCE: Knowledge Transfer joint forces for efficient innovation policies,” a project in which the UTEN Portugal network has been invited to share experiences.

During this visit, the five delegations had the opportunity to get to know the technology and knowledge transfer system of the University of Porto, as well as the strategy promoted in the northern region of Portugal to improve competitiveness. The aim of this initiative was to promote the discussion and exchange of ideas, in accordance with the mission of KTFORCE, which is to improve innovation policies in every partner region, benefiting from the experience of technology transfer offices.

The members of the delegations also had the opportunity to visit the Comissão de Coordenação e Desenvolvimento Regional do Norte (CCDR-N, the Commission for Regional Development and Coordination in the North of Portugal) and several technological institutions, including INESC TEC, where the UTEN Portugal network was presented a part of the UT Austin|Portugal program, the Parque

de Ciência e Tecnologia da Universidade do Porto (UPTEC, the association of technology transfer at the University of Porto), the international innovation center Fraunhofer AICOS Portugal, and finally the Centro de Nanotecnologia e Tecidos Inteligentes (CeNTI, the Nanotechnology and Intelligent Tissue Center), in Famalicão.

The event coincided with the launch of KTFORCE. KTFORCE is a 30-month project to improve innovation policies focusing on Knowledge Transfer between Academia and Industry, benefiting from the experience of key players at an operational level in academia, particularly Knowledge Transfer Offices. KTFORCE is supported by the INTERREG IV C Capitalization Programme, under the fourth call for applications, and co-financed by the ERDF (European Regional Development Fund).



## 2.12 Strategic Session: Entrepreneurship & Regional Growth: Connect with Pittsburgh

### *Innovation & Entrepreneurship as Key Economic Drivers*

*Lisbon, October 30, 2012*

UTEN Portugal and the Carnegie Mellon Portugal program organized a Strategic Session, *Entrepreneurial and Regional Growth: Connect with Pittsburgh*. Keynote speakers for the event were Suzi Pegg and DeWitt Peart. Mikel Burzako Samper (IBK-LBR and the Investment Representative of Commonwealth of Pennsylvania in Spain & Portugal) was also present at the event.

The Pittsburgh Regional representatives discussed the ways that *innovation* and *entrepreneurship* go hand in hand as key economic drivers, not just for the Pittsburgh Region but across the United States. The strategy adopted by Pittsburgh served to make the region a magnet for international businesses, as global companies with innovative technologies increasingly seek global growth by soft landing in the Pittsburgh region. This session focused on Pittsburgh's story of reinvention that has spread quickly across the world. And while technologies being developed and commercialized in Pittsburgh have indeed helped to transform the region's economy, more importantly, they are solving some of the world's more pressing challenges.

Targeting policy makers, public authorities, university management, technology transfer officers (TTOs), start-up companies and researchers, as well as the general public, the session was an opportunity to share

new visions on how Entrepreneurship can be used to achieve economic and regional growth. This event was held at Universidade Nova de Lisboa, on October 30, 2012, and welcomed more than 35 participants.

### *Bio Keynote Speaker, Suzi Pegg*

A native of Sheffield, England, Suzi Pegg came to Pittsburgh in 2000. During her time at the PRA, Ms. Pegg has assisted in developing global bi-lateral business alliances between South Western Pennsylvania and counterparts in Europe and Asia. Her hands-on approach to working with international companies wishing to onshore to southwestern Pennsylvania, has gained her a reputation as being an essential partner in developing ties into the Pittsburgh Region. She is also responsible for Pittsburgh's regional-led International Marketing Initiatives that promote the region to business decision-makers across the globe.

### *Bio Keynote Speaker, DeWitt Peart*

DeWitt Peart has worked in a variety of capacities in the private sector. Currently he is executive vice president for economic development at the Allegheny Conference on Community Development, and president of the Pittsburgh Regional Alliance (PRA), the affiliate of Allegheny Conference which markets the Pittsburgh region nationally and internationally. He has served as the Greater Pittsburgh Chamber of Commerce's senior vice president of government affairs. In this capacity DeWitt provided oversight for the government affairs program managing multiple issues such as education, regulations, tax policy, transportation and other infrastructure issues at the federal, state and local levels.

António Rendas addresses the strategic session. Keynotes Suzi Pegg and DeWitt Peart are on the right.







Energy ran high at all 3DS events in Portugal, beginning at the University of Coimbra. jeKnowledge coordinated Coimbra's event; David Bento was very persuasive in the promotional video that inspired 125 students to apply for an event limited to 40 participants.

## 2.13 Three Day Startup

Three Day Startup (3DS) is an entrepreneurship education program designed for university students with an emphasis on learning by doing. The idea is simple: *help students start a technology companies within the course of three days*. 3DS is an entrepreneurial venture in itself, initiated by Gregory Cooper and Cam Howser as students at The University of Texas at Austin. The 3DS business premise was developed with the help of the IC<sup>2</sup> Institute's Austin Technology Incubator, and early local success was rapidly accelerated to a global entrepreneurial education model. In 2012 UTEN has integrated 3 Day Start-up events in three locations in 2012: Coimbra, Porto, and Lisbon.

The three-day format induces an intense, sleep-deprived, caffeine-driven environment in which results (and emotions) run high. Across all 3DS programs, mentors are impressed by the students' positive energies and their progress over a mere three days. Students consistently describe the experience as more than emotional, providing a paradigm shift in their thinking: they come to envision the world as one which they are empowered to change. Tangible success stories accumulate across the globe: more than 40 worldwide 3DS events have given rise to 28 companies collectively raising more than \$8 million in investment.

The mission of 3DS is to build entrepreneurial capabilities and cultures on university campuses around the globe, working with regional teams to organize intensified creative events that help students become entrepreneurs who are connected within a

powerful network of mentors, investors, and talent. Over one weekend participants in this entrepreneurial acceleration program to create:

- *Business models:* We know many people with great ideas who fail to execute on them for a variety of reasons: lack of time or money, no access to the right people, or not enough confidence to make the plunge. We provide all of the resources to bring an idea to life with a team of nearly 40 highly skilled and motivated individuals.
- *Contact with potential customers:* Getting to know your customer is a key part of building a business that solves a real customer problem. Talking with individuals and companies that represent your customer base is an integral part of the 3 Day Startup experience.
- *Prototypes:* The students maximize their time, and the availability of strong mentors, to create a prototype in the form of a professional website or app, which are juxtaposed against key questions such as: *Is there a market to support this? How difficult is your model to imitate? Why hasn't someone done this before? What is your defensible strategic position for this venture?*
- *28 Lasting professional and personal relationships:* The group of entrepreneurial students and mentors create strong relationships in the course of this intense event as they work hard, play creatively, share ideas, and sleep little. The weekend culminates with team presentations to a group of investors who are also like-minded and open to opportunity.



3DS momentum increased at the U.Porto event.

3DS essentially provides students with a “business lab” experience to support their academic work with business development practice, similar to the way that chemistry lab coursework supplements lecture-based coursework, to provide hands-on learning.

### 3DS Coimbra

In Coimbra, jeKnowledge (a Junior Enterprise of the Faculty of Science and Technology of the University of Coimbra) organized this event for February 24 to 26, 2012. Anticipation was high, and organizers experienced a painful “what now” moment when 125 students applied for an event that was limited to 40 participants. Applications were reviewed, and 40 students were selected to participate in this stellar event that resulted in the creation of seven companies that were accepted into business incubators including YCombinator, 500 Startups, and Dreamit Ventures. Three of the projects started at this event include:

**URBANFLOW:** a realtime user-generated urban mobility service using gamification principles for user engagement. By giving users the means to share realtime information when using all kinds of urban transportation we can collectively improve and scale up a multimodal information system.

**GoCHALLENGEME:** a new web platform that's all about virality and democracy: to help you challenge your friends, neighbors, and everyone else to create videos that everyone wants to see.

**LAZYU:** a phone app that allows university students to quickly hire short turnaround services such as

homework delivery or fast food pickup for a small sum, mutually benefiting both parties.

### 3DS Porto

After the success of 3DS in Coimbra, momentum continued to run high for the event that took place in Porto, June 1-3, 2012, organized by the Federação Académica do Porto – FAP (the student federation of the University of Porto), with the support of StartUp BUZZ, U.Porto and UTEN Portugal, at the Faculdade de Farmácia da Universidade do Porto (Faculty of Pharmacy of the University of Porto).

The Porto event provided eight mentors: Leonor Gomes (*Easy Bus*), Gonçalo Cruz (*Jump Willy*), Henrique Pereira (*ISA*), João Machado (*Miyuki*), Miguel Fernandes (*FoodinTech*), Luís Oliveira (*Viral Dynamics*), Pedro Pardinhas (*20|21*) and Tiago Ferreira. On the final day of the 3DS Porto, six groups pitched six business ideas. Each presentation was followed by the feedback of five panelists: Ana Rosas Almeida, Carlos Brito, Filipe Castro, Marco Bravo, and Sara Medina.

“This was the best entrepreneurship event that I have participated in. It was well organized, based on hands-on activity... very well designed.” stated participant Tiago Fernandes (3DIMPACT), who described the concept as “very well designed.”

“Over the course of these three days, we have learned how to start a business, step by step,” added Lino Gonçalves (CHEAPSHOP).

Carla Ferreira, Instituto Superior de Engenharia do Porto said, “What I enjoyed the most out of the



workshop was the learning by doing process combined with the lean approach. I had read some things about lean startups but never put it into practice. In this workshop I've learned how it works and how to put it in practice for my own startup. I also enjoyed the mentors. The mentoring process was very powerful and allowed us to learn much more faster. Through the wise questions of the mentors we had new insights, which allowed us to shape and improve our original idea. The networking was also very important. Meeting new people with the same mind-set is very important to keep any entrepreneur motivated to keep going. I think these kinds of events are really for entrepreneurs to improve and grow their spirits and making ideas get out of the paper and to be put in practice."

Cam Howser, CEO of 3DS was also pleased with the outcome of the 3DS edition in Porto. "Not only were the students aware of the value of this opportunity, but they also benefited from very motivated and experienced mentoring, who were present throughout the day," he explains. "This is the most effective way of mentoring because the relationship between the students and the mentors will carry on after the event."

One of the mentors, Luís Oliveira has already started reconnecting with some of the groups to help them put their projects into action. Luís feels that the event was a success and recommends that it is organized again next year. The significance of the mentor's role was highlighted by several participants. Marcos Domingos (AKEETY) stated that mentors pointed out various financial, legal and viability implications of the original idea which helped participants transform raw ideas into realistic products. Rafael Jegundo (UNPLUGG) pointed out that the mentors encouraged participants to explore new perspectives and to test different strategies, which also helped the teams to create a stronger final product.

Marco Bravo, with the IC<sup>2</sup> Institute, found the event "extremely positive at every level" due to the participants' creativity as they brought the ideas through a remarkable evolution that he compared to "polishing a rough diamond."

One key aspect of the 3DS concept is the market validation stage, in which students are encouraged to leave the site to interview target clients regarding the value proposition that they promote. This helps provide participants a perspective of the real market which requires solutions, as per Ricardo Moreira (DAR).

"Being passionate about one's business is not enough if the target client of that business idea is not passionate about it as well; the client always has the final word," states Cam Howser.

While focused on the present group and their potential, the 3 Day Startup CEO sees the larger picture as well, "Small economies like Portugal's can generate technology companies in order to enter the global market. 3DS, and similar programs, can help get the ball rolling."

"The field of entrepreneurship in Portugal is excellent when entrepreneurs are given the proper conditions to

move their ideas forward," observed Henrique Pereira (Managing Director, Energy & Utilities, ISA).

Sara Medina, the CEO at SPI Ventures, stressed that initiatives such as the 3 Day Startup initiatives can provide, for many young people, the first opportunity to connect with the entrepreneurial world.

The University of Porto supported the 3 Day Startup edition in Porto as part of its tradition of supporting entrepreneurship through institutions such as UPIN (University of Porto Innovation) and UPTEC (Science and Technology Park of University of Porto). Carlos Brito, the university pro-rector for entrepreneurship and the Director of UPTEC, congratulated the initiative and stated that Portugal needs people who "think big", stressing that successful entrepreneurship requires not only innovative projects, but also resilience and strength to implement them. According to Carlos Brito, entrepreneurship is 1% inspiration and 99% hard work.

Filipe Castro, who evaluated the final pitches, feels that 3DS events should prioritize project continuance and performance by enabling access to mentors, capital, incubation and foreign market. Presentations judged to have the highest potential in Portugal were awarded entrance to incubators. Porto presentations included:

- AKEETY: a Web platform to facilitate start-up companies to help manage and track milestones, mentor follow-up, and connect with investment platforms.
- CHEAPSHOP: a Smartphone app that provide shoppers, while they are at the mall, of on-site discounts; notifications reflect personal profile and preferences.
- DAR: Exploring concepts for joining agriculture and technology, in order to reap new fruits of agriculture in the digital era.
- SEREI AS CHAVES: a web platform that mediates crowd betting and promises to increase the chances of success.
- UNPLUGG: a Web service that allows users to reduce energy costs with to 20% by monitoring, analyzing and promoting challenges to maximize savings.
- 3DIMPACT: a "motion capture suit" with portable calibration technology, to analyze and improve player performance for sports such as golf and tennis.

### 3DS Lisbon

In the words of Gregory Cooper, cofounder of *3-Day Startup*, "The organizers, mentors, and participants [of Lisbon 3DS] were just fantastic—smart, enthusiastic, and tireless." The 3DS Lisbon event held November 2-4, 2012 was organized with the Técnica Entrepreneurship Club and Entrepreneurs Break, and took place at Instituto Superior de Economia e Gestão (ISEG). Pedro Conceição, a member of the event's organizing committee, feels that 3DS plays an important role in promoting entrepreneurship to students. Positive outcomes from this year including



Conversations and cross-talk at Three Day Startup in Lisbon (2012).

an impressive evolution of ideas, while it illustrates the participant's ability to work under pressure. Thirty-seven entrepreneurs, of different backgrounds formed seven startup teams. Regional mentors included Diogo Cruz (*eMove*), Gregory Cooper (*3-Day Startup*), Joana Mendonça (*Pocketed*), João Rocha (*Live Sketching*), Paulo Pinho (*Planno*), Pedro Balas (*eMove*), Pedro Janela (*WyGroup*), Pedro Moura (*Wishareit*), and Ricardo Sousa (*Switch Conference*).

Mentor João Rocha stressed that 3DS brings together people from different fields (management, design, and technology), who otherwise would not have found the opportunity to work together as a team. Pedro Moura clarified that the event helps demonstrate that having a good idea is not enough and that self-criticism and the ability to adapt to feedback are critical for any entrepreneur. Joana Mendonça characterized the participants as extremely committed, focused, and attentive to comments and suggestions. She feels the 3DS event should be replicated in more cities, especially in the interior regions of Portugal.

Alexander Kustov, who provided support in programming and informatics, emphasized that participants who do not leave the event with a project will have gathered valuable entrepreneurial contacts, in addition to their learning experience. Kustov was particularly impressed by the evolution that teams made from the first day, when pitches were often unrealistic, to the third day, when they presented mature concepts.

### **Bootcamp**

To maximize the impact of the 3DStartup event, Lisbon participants prepared for the experience by attending a boot camp training session the week of October 25. Two workshops were presented: "Lean canvas," by

Paulo Pinho (*Planno*), in which participants discussed and created a business model for incubators; and "From zero to hero," by Diogo Cruz (*Emove/Rocket Internet*) who presented milestones for the entrepreneur beginning a new venture. These workshops also helped initiate networking, as participants became acquainted with one another in preparation for mixed teaming in the following week's 3DS events.

### **Day 1**

Day One began at 10 a.m., as Gregory Cooper (3DS facilitator) provided a welcome to all participants, which was followed with a brainstorm session for business ideas. Fourteen ideas were presented, and participants chose seven of these for further development over the weekend. Teams were matched by skill-set to help each project develop most rapidly. Nine experienced mentors (entrepreneurs themselves) worked throughout the day and evening with participants to determine the most feasible business model for each project.

### **Day 2**

On Day Two, teams focused on exploring the validity of the business model. Each group conducted client surveys to help determine an effective cost/price model, and in the afternoon, each group presented an intermediate pitch of the business idea, to assess the group's progress, and to help provide feedback and insight for creating a compelling pitch to investors the following day. Following the pitch session, Ashok Rao (a serial entrepreneur and the chairman of TiE Global) presented a motivational speech on entrepreneurship. Teams continued to work on their projects until midnight, when they enjoyed an energizing break with the DJ group "The Milano Hard Sounds."



### Day 3

Tension ran high on Day Three as the teams prepared for the final pitch. Mentors worked with groups to help them prepare for the investor pitch. Final finishing included reviewing issues such as project values as well as polishing slides for the presentation itself. Seven business concepts were presented:

- **BLOOMP:** Online application which helps improve networking and interaction in real-time.
- **CHEF'S LUV:** Online platform to sell and deliver gourmet dishes designed by professional chefs.
- **HOME SERVICES:** Online service where you can request for and book trustworthy domestic service.
- **JOBGING YOU:** Worldwide online platform that uses an algorithm to match the skills of job candidates to the requirements of job offers.
- **TAG MY STEP:** User-friendly mobile app that tags images created by other users to show points of interest in a city and help users build paths.
- **THE GRAIL TALE:** Mobile "gamified religious" system that intends to bring people back to their

community. The system also allows users to self-assess their good deeds.

- **OUTCOOK:** Certified and equipped kitchen space to cook, accommodate clients, or accommodate friends.

Each team presented a final pitch to an investor jury panel of Alberto Cunha (Tagus Park Incubator), Hugo Macedo (Founders Institute), and Pedro Moura (Startup Lisboa). Three incubation prizes were on the table, one from Startup Lisboa and two from Tagus Park incubator, as well as tickets to the Switch conference and discounts for Founders Institute. The jury's deliberations awarded the incubation prizes to: HOME SERVICES (Startup Lisboa), and TAG MY STEP and BLOOMP (Tagus Park).

The overall experience was both rewarding and exhaustive, and the weekend ended as the participants, mentors and organizers "decompressed" and reviewed their accomplishments as they dined together at a restaurant on the waterfront.

Student entrepreneurs refine their value proposition at the Three Day Start-up event in Lisbon (2012).





BGI Venture Competition semifinalists from the first two editions have raised 8,105,259 € in awards and grants. Semifinalists from the third edition are raising the total even higher.

## 2.14 Building Global Innovators (BGI) Venture Competition©

(Formerly ISCTE-IUL MIT|Portugal Venture Competition)

The third UTEN international venture competition with MIT | Portugal was launched in March 2012, with a new consolidated brand, *Building Global Innovators (BGI) Venture Competition*, a name to communicate the program's focus on taking technologies worldwide. The program is a coordinated effort by ISCTE-University Lisbon Institute, MIT|Portugal, Caixa Capital, the Deshpande Center for Technological Innovation (MIT), and The Martin Trust Center for MIT Entrepreneurship.

The program focuses on long term results, and the semi-finalists from the previous two years have made excellent progress in taking their ventures to the world. Current metrics include:

- Nearly €10 million in funding has been secured by 20 semifinalists in just over 2 years. Over half of this funding is from Venture Capital sources (table 2.6);

- Nearly 100 new jobs have been created, bringing the total to more than 150 jobs in 40 start-ups thus far;
- Thirteen new start-ups have been founded with two years' of Caixa Empreender+
- Economic leverage: > 7x (ratio of funds raised by semi-finalists' over two years, divided by total initiative cost in same two years)

These endeavors would not have been possible without the financial support provided to the teams by our financial partner, Caixa Capital via the *Caixa Empreender+* fund. We commend Caixa's bold contribution in sharing our vision for the development of our international innovation ecosystem through financial support of up to €1 million a year, awarded to four start-ups. We similarly commend all our partners, particularly UTEN and its international network.

### 3rd Edition

The 3rd edition began in March as the BGI Venture Competition mobilized a significant number of people and strategically placed entities.

**Table 2.6 Funding Raised by BGI Venture Competition Semi-finalists and Sources**

Funding Sources	1 <sup>st</sup> Edition	%	2 <sup>nd</sup> Edition	%	1 <sup>st</sup> + 2 <sup>nd</sup> Ed.	%
VC/Angel Financing	3,292,000 €	55.7%	815,429 €	37.1%	4,107,429 €	50.7%
Awards/Grants	2,615,863 €	44.3%	1,381,967 €	62.9%	3,997,830 €	49.3%
<b>Total to Date (1 + 2)</b>	<b>5,907,863 €</b>	<b>100.0 %</b>	<b>2,197,396 €</b>	<b>100.0%</b>	<b>8,105,259 €</b>	<b>100.0%</b>
<i>Secured funding if Milestones Met</i>	<i>1,151,000 €</i>	<i>19.5%</i>	<i>400,000 €</i>	<i>18.2%</i>	<i>1,551,000 €</i>	<i>19.1%</i>
<i>Potential Total (1 + 2 + 3)</i>	<i>7,058,863 €</i>		<i>2,597,396 €</i>		<i>9,656,259 €</i>	



## 20112-2013 Competition Calendar

Mar. 15, 2012	Submission period opens
May 31, 2012	Deadline for Project Submissions
July 2, 2012	20 Semi-finalists' announcement
July 23-26, 2012	E-teams Crash Course I
Nov. 13, 2012	Track Finals event
Nov. 21-23, 2012	E-teams Crash Course II
Feb. 28, 2013	Grand Finale event
Spring 2013	E-teams III (@MIT)

For the first time the live road show was expanded outside Portugal to the United States, Canada, and Brazil, resulting in 132 submissions from 14 countries:

- Portugal (58%)
- Brazil (13%)
- Russia (7%)
- Italy (5%)
- Colombia (4%)
- Spain (3%)
- Germany (2%)
- USA (2%)
- Belarus (1%)
- Chile (1%)
- Czech Republic (1%)
- Estonia (1%)
- India (1%)
- Mexico (1%).

More than one thousand entrepreneurs were involved in the 3rd edition of the BGI Venture Competition. We credit this number to our many enthusiastic ambassadors, whose testimonials proved to be very inspirational to entrepreneurs:

- “Linking science and technology to the right market, at the right time, in the right way.” *Charles Cooney, Deshpande Center*
- “We have talent, we have creativity. With the right dynamics these companies can reach global markets.” *Carlos Oliveira, Secretary of State for Entrepreneurship, Competitiveness & Innovation (Portugal)*
- “You don’t need to go to work for a big company or emigrate. You can begin your own start-up... You get introduced to seasoned entrepreneurs that will be able to help you.” *Ilia Dubinsky, Skolkovo Tech*
- “It will create new jobs and attract investment.” *José Estabil, MIT*
- “More than a competition: we support entrepreneurs for up to 5 years. We walk the talk. Think and make it happen. Do it.” *Gonçalo Amorim, Program Director*

Submissions came mainly from start-ups (both national and international), representing 50.0% of total. Entries were distributed across the competition’s four

tracks: Information Technology & the Web (52.3%), Products and Services (24.2%), Life Sciences (13.6%) and Sustainable Energy and Transportation (9.8%). International participation was high overall (41.7%).

Track	Total #	Total %	Int'l #	Int'l %
IT & Web	69	52.3%	30	22.7%
Consumer Products & Services	32	24.2%	12	9.1%
Life Sciences	18	13.6%	10	7.6%
Energy & Transportation	13	9.8%	3	2.3%
<b>Total</b>	<b>132</b>	<b>100.0%</b>	<b>55</b>	<b>41.7%</b>

A seven-member international jury panel selected the 40 most promising submissions (ten per track). After 40 interviews, the jurors selected 20 semi-finalists for the 3rd edition, which were announced July 2, 2012:

IT & Web	Consumer Prod/Svcs.	Life Sciences	Energy & Transport
Blastboard	D-Orbit	BSIm2	i2d
Faces.in	Educed	CardioCare	Retrosim
Fidesys	PetMyPet	Cerebro-AP	Scootzz
GoClapp	Trade Dare	Hy-PAT	Unplugg
LikeHack	YouBeQ	RD-Fixer	Veniam

Descriptions of each of these technologies is presented in section 2.15.

The BGI’s Entrepreneurship Teams (e-Teams) were invited to a boot-camp held at ISCTE-IUL July 23 - 26, 2012. The goal was to ground all the selectees in the fundamentals of presenting their value propositions succinctly, clarifying the problem solved, and organizing their Go to Market plan along a customer-centric method. The boot-camp was attended by 49 out of 89 team members, with participants from each of the 20 teams. The syllabus was created specifically for this year’s semifinalist teams and covered five main topics to help each team develop a strong business plan presentation.

- **Team Building** (Oliver Rohrich)
  - » The definitions of the different roles of Belbin
  - » Important rules of brainstorming
  - » Concepts for new products to take advantage of the crisis situation
  - » Basic presentation and non-verbal communication skills
- **Communication Techniques** (Vasco Trigo)
  - » Do’s & Don’ts
  - » Fundamentals for communicating to non tech audiences
  - » Preparation of Elevator pitches
  - » Poster preparation
- **The Go-to-market Plan** (Gonçalo Amorim, Luís Barros, Walter Palma, Duarte Mineiro & José Paulo Esperança)
  - » Competitors and Differentiation; Market Size & Structure
  - » Value creation & pricing strategy; Business model & IP Strategies

- » Technology Roadmap and Development; Operations & commercialization strategies
- » Financial Projections and Funding.
- **Business Development** (involved more than 10 keynote speakers)
  - » Business Models & Traction
  - » Customer development model
  - » International commercialization
- **Industrial Property & Corporate Law (Wolf Greenfield, Clarke, Modet & Cº Portugal, Portuguese IP Office – INPI, Cerqueira. Gomes & Associados & JJ Shamon Group)**
  - » IP Fundamentals, European and PCT tracks
  - » Advanced Strategies for Biotechnology patents
  - » IP Strategy Development and Implementation
  - » Companies & Shareholders Law, Term sheets

José Paulo Esperança, Pro-Rector for Entrepreneurship of ISCTE-IUL, convened the Boot Camp's closing ceremony with Walter Palma, Director at Caixa Capital, and introduced the Alumni guests: André Pina (Watt Intelligent Solutions), Hugo Silva (Plux), João Afonso (Musikki), Maria Semedo (Metablue), Pedro Santos (All-Desk) and Roberto Ugo (Around Knowledge). Luis Barros, MIT Program Director moderated a round table discussion of these participants in the Alumni Founder's panel.

Over 48 potential catalysts from multi-disciplinary backgrounds from the finance, industry and entrepreneurial communities met and mingled with Venture Competition participants during the "speed dating" portion of the program. Among them, were 12 Alumni teams from both previous editions.

### Go-to-Market Plan

This first e-Teams Crash Course was followed by two months of intensive work on the Go-to-Market Plan strategies which were evaluated by four track-specific Jury panels, each composed of more than ten industry experts. The will judge and select the 4 most promising candidates as Track Finalists and 4 Honorable Mention to be announced in the public ceremony – Track Finals, on November, 13, 5:00 p.m. in Lisbon. Semi-finalists are competing for financial and in-kind awards:

- A €1,000,000 purse comprised of:
  - » Four (4) €100,000 Track Finalist awards,
  - » Grand Finale €100,000 additional award;
  - » All with potential to double awards (an additional €500,000) during the Venture Phase if venture milestones are met.
  - » Awards underwritten by *Caixa Empreender+*, the venture capital arm of Caixa Geral de Depósitos;
- US-based Catalyst mentors;
- An opportunity to participate in e-Teams II, intensive Go-to-Market boot camp in Lisbon;
- An opportunity to participate in e-Teams III, an Entrepreneurial Marketing, Sales & Networking 2-week launch, e-Teams III held at MIT Kendall Square in May 2013;

- Start-up Accommodation for one month at the Cambridge Innovation Center's award winning space in the heart of the vibrant entrepreneurial ecosystem in Cambridge, MA.

### Final Four Teams

The four winning BGI Venture Competition winning start-ups and four honorable mentions were selected November 13, at ISCTE-Lisbon University Institute. Walter Palma, Director at Caixa Capital, commended the quality of finalist candidates, and emphasized the convergence of this initiative with similar efforts to launch Portuguese innovation into the global market. More than 500 attended the official ceremony to hear the announcement.

José Paulo Esperança, ISCTE-IUL Pro Rector for Entrepreneurship, introduced the evening keynote. Speakers included Eli Talmor from London Business School & Collier Institute of Private Equity, Joel Serface from Brightman Energy, LLC, João Fernandes from Program +E+I and Miguel Seabra, President, Fundação para a Ciência e a Tecnologia. The 3rd Edition Finalists are,

- **Life Sciences Track: RD-Fixer**, a high performance visualization system to guide endoscopic surgeries (*Portugal Team: João Barreto, João Salgado and Rui Melo*).
- **Sustainable Energy Systems & Transportation Track: Veniam**, a seamless low-cost vehicle-based internet infrastructure for fleet management (*Portugal/USA team: João Barros, Susana Sargento, André Cardote, Luísa Lima, Robin Chase and Roy Russell*).
- **IT & Web Track: Faces.in**, a global social discovery and geo-location service for all mobile phones (*Portugal/USA team: Paulo Dimas, Stan Kugell, Guilherme Portela Santos, Jorge Medeira, André Gonçalves, Frederico Silva*).
- **Consumer Products & Services: D-Orbit**, an intelligent propulsive device for sustainable satellite end-of-life (*Italy team: members not available*).

These finalists are eligible to receive financial support (€ 400,000) for the use of their Go-to-Market plans. The allocation of the remaining awards (€ 400,000) over the next two years will depend on the degree to which the teams satisfy milestones that will be set and agreed between Caixa Capital and teams. In addition to financial support, the finalists receive specific training: e-Teams, coaching, and U.S.-based Catalyst mentors, and will be invited to participate at MIT IdeaStream, an invitation-only event to showcase technology for investors, on May, 2013 in Cambridge, MA.

The jury also awarded honorable mentions to four projects: **CardioCare (Brazil)**, **RetroSiM (Portugal, U.S., Iran)**, **Fidesys (Russia)**, **TradeDare (Portugal)**, for their innovative nature and potential for creating value from a technology base. These teams will benefit from direct access to venture capital partner, Caixa





The BGI Venture Competition provides several unique benefits as it helps members better their proposals; and continues mentoring toward milestones that reap additional financial awards.

Capital, to present and discuss their project, and from interaction with their U.S.-based Catalyst mentors.

### *Contest promotes entrepreneurship and innovation in Portugal*

The 3rd edition of Building Global Innovators received 132 applications from 483 professionals by May 31, 2012, and from an international community of students, researchers and professionals in many fields, from polytechnics, universities and other public and private institutions. These entrepreneurs with start-ups are dedicated to promoting technology-based businesses, and have been founded for less than five years to qualify for the competition.

Luis Reto, Rector of ISCTE commented, “This year’s teams offer a broad range of projects that challenge and innovate in their fields. This competition enables enterprises and projects in early stages to have access to knowledge and expertise of MIT and the ISCTE, making them open to global markets. This award was designed in an innovative way in order to put a strong focus on i.e. ‘learning by doing,’ including the creation of conditions conducive to the global projection of the start-ups.”

### *Increased Momentum*

The significant increase of the submissions (1st Ed.: 95; 2nd Ed.: 60; 3rd Ed.: 132), reflects a global interest for the initiative, not only in geographical terms, but in terms of the maturity of start-ups and value propositions. International participation has more than doubled (1st Ed: 13.6%; 2nd Ed.: 42%) and the number of participating startups reached fully half of

the submissions (2nd Ed: 48.7%; 3rd Ed.: 50%). The initiative saw participation from several new countries including Brazil, Russia and Italy, revealing a growing interest from the international tech-based community and broadening the potential for strategic partnerships.

The competition has been able to brand itself to key international stakeholders including top investors as a must-attend event, generating investment-ready opportunities and strong value propositions. It has been able (in about two years) to establish itself both nationally and internationally as an engine for innovation and tech-based entrepreneurship, as it attracts potential innovators and technologists that participate to increase their opportunities in a global marketplace.

This important initiative will continue to strongly impact Portugal’s entrepreneurial ecosystem as it fosters strong and durable bonds with international investors, business catalysts, as well as creating a unique Alumni network of entrepreneurs.

### *About Caixa Capital*

Caixa Capital is the Venture Capital and Private Equity arm of Caixa Geral de Depósitos, the state-owned and largest Portuguese banking group, with a strong tradition in the country’s financial system and a solid financial performance, stemming from its €120B in assets and presence over 20 countries. The close relationship with all market players in Portugal is evidence of its strong commitment to quality in services provided and innovation, within a successful model of corporate governance. Caixa Capital benefits from the

synergies emerging from CGD and is the VC industry leader with a portfolio of €660M and 75 companies. With a generalist investment policy, it covers a broad array of sectors, across early stage, organic and M&A growth, and internationalization initiatives, through a variety of financing structures, including Mezzanine and Renewable Energy Funds. As a Fund of Funds, it is present in areas such as Tech Transfer Accelerators, Business Angels, Side Cars. and Corporate Venturing.

## 2.15 BGI Semi-finalist Entries, 3rd edition

### Track: Life Sciences

#### BSim2

BSim2 is poised to address two main health challenges of the 21<sup>st</sup> century: the discovery of new drugs against amyloid neurodegenerative diseases, an unmet medical need among an ageing World population; and the reduction of time and costs in pre-clinical drug R&D.

**BSIM<sup>2</sup>**

To meet these challenges BSim2 assembled a suite of high throughput computational screening workflows to boost the discovery and the optimization of new lead compounds. Our first product – a family of molecules to treat Familial Amyloid Polyneuropathy (FAP) and related diseases – is at the lead optimization phase and is targeted to a market of €300 million per year, just in Europe. *Team: Carlos J. V. Simões, Catarina Maia, Rui M. M. Brito.*

#### CardioCare

CardioCare is a product in a final stage, with prototype developed after four years of R&D investment. All the applications and features have been field tested. It holds patents in Brazil and abroad.



This single multifunctional device incorporates a set of four innovations:

- It performs multiple electrocardiographic exams
  - » ECGs, Holter, Looper and Cardiac Monitor
- Transmits results via Bluetooth
- Accesses Cloud Computing
- Business Model based on a service platform.

It makes CardioCare a game changer in the Industry. *Team: Edivaldo Santos, Francisco Gomes, Gilmar Machado, Laerte Paludeto, Tony Novaes.*

#### Cerebro-AP

Cerebro-AP results from R&D in automatic sound patterns recognition. The platform allows early diagnosis and prevention of the risk level of a stroke, by automatically recognizing the symptoms in real-time.



The core system identifies the sound patterns of several blood flow dynamics in the carotid. It includes a non-invasive continuous sound acquisition, connected to a smartphone which sends the signal to Sound Analysis Server. The resulting carotid bruit diagnosis will be available to health care providers in real-time as well as checking the historic entries in the platform. *Team: Bárbara Fonseca, Miguel Soares, Sérgio Lopes, Vítor Soares.*

#### HybPAT

Pharma Industry spends an average of 15 years to bring a new drug to patients at a cost of about one billion dollars. HybPAT is a software solution that supports the PAT initiative (FDA, 2004). It applies hybrid algorithms, unlike our competitors that use Multivariate Data Analysis alone.



We have achieved reductions of up to 30% in PPD costs, 50% in implementation time and a product increment of up to 300%. Our technology is applicable to any type of biologics process. It offers more accurate predictions with shorter development times. HybPAT is composed by multidisciplinary experts, authors of 10% of all international articles on hybrid modeling applications on bioprocesses. *Team: Moritz von Stosch, Rui Oliveira, Mário Eusébio, Cristiana de Azevedo, Ana Marques, Denis Cunha.*

#### RD-Fixer (Finalist)

RD-Fixer is a software application for medical endoscopy that improves the visual perception of the observed scene. Endoscopes have small optics that deform the image geometry and affect depth perception, thus hindering surgical execution and increasing the learning curve of new practitioners.

## RD-Fixer





RD-Fixer filters the endoscopic video stream to correct the radial distortion. This is accomplished in real-time, and without changing the existing surgical routine. Preliminary clinical trials provide encouraging evidence that RD-Fixer dramatically improves surgical performance. *Team: João Pedro Barreto, Rui Melo.*

## Track: Sustainable Energy & Transportation Systems

### Intelligence to Drive (i2d)

Intelligence to Drive (i2d) transforms massive data produced from driving activity (where, when, and how) into business. i2d is the result of several years of R&D and comes as a consequence of a co-funded 1.5 M€ pilot project executed during 2011 - 2012.



Using innovative plug&play electronic devices and secure M2M communications, i2d captures, aggregates and processes data, aiming to profile and improve driving behavior, providing accurate and valuable information to national regulators, transport based businesses and all individuals that seek Intelligence from driving. *Team: João Matias, Miguel Aires, Tiago Farias.*

### RetroSiM

RetroSiM allows building owners, facility managers and utility companies to obtain reliable, fast and cost-effective building retrofit recommendations. Our unique, innovative web-based platform integrates remote building monitoring, built-in energysimulations, and multi-objective optimization analytics.



RetroSiM will successfully engage our customers with an intuitive and attractive, as well as non-intrusive, interphase to our system, which overcomes the burdensome steps associated with traditional energy audits and manual building energy modelling. *Team: André Lima, Bruno Bueno, Carlos Diogo Silva, Ehsan Asadi.*

### Scootzz

Scootzz is developing an innovative electric scooter for a rapidly growing market. The Scootzz modular concept is based on a highly efficient control electronics, controlling a two-wheel drive system, and supported by a simple frame with an outer textile cover that replaces all the traditional plastic parts.



This enables not only a cost reduction, but also an additional feature of customization on demand, by simply replacing the inexpensive outer cover, whenever the customer wants. *Team: Alexandre Sousa, Paulo Correia, Paulo Silva, Pedro Oliveira, Tiago Barbosa.*

### Unplugg

About 20% of your energy at home is wasted. There are monitoring systems that help tackle this, yet they usually lack powerful and simple web and mobile apps.



Our web platform helps consumers understand and act on energy consumption with monitoring, analytics, automation and gamification, offering a complete experience. This approach creates an unique feedback loop allowing consumers to attain up to 20% on savings. Our cloud-based energy management solution stands out by focusing on the end user and providing an open platform that leverages the integration potential with hardware systems. *Team: António Pratas, Jorge Santos, Rafael Jegundo, Rui Magalhães.*

### VENIAM (Finalist)

Smartphones and iPads are driving the growth of 'on the go' wireless data consumption. This high demand costs consumers huge amounts in cellular fees, and is forcing telcos to build out expensive new infrastructure.



VENIAM sells a low-cost box that once plugged into existing vehicles can turn cars, taxis, buses, and trucks into mobile hotspots. This provides consumers and companies with low-cost connectivity, delivers a dramatically lower cost infrastructure solution to telcos, and opens up a new world of connected vehicle applications. The market is as large as the world's one billion cars. *Team: João Barros, Luísa Lima, Susana Sargento, Robin Chase, Roy Russel.*

## Track: IT & Web

### Blastboard.com

How long did you have to search, the last time you needed an electrician, an apartment, or your last hire? Probably longer than you wanted. And you probably found the experience quite painful. You rarely trust results you find on Google, while marketplaces like Monster and Craigslist are spammy, and brokers are expensive.



You end up asking your friends for recommendations. Actually 90% of people ask their friends before making a decision. This takes time. Imagine there was a way to involve your friends and friends-of-friends to help you find the things you need. Enter Blastboard.com and tell us what you need, your reward, connect to your social networks and blast. Your friends will turn it viral. If somebody can help you, everybody in the Blast Chain equally shares your reward. Blastboard generates relevant, trusted, higher-quality referrals creating a win-win for everybody. *Team: Andreas Eberharter, Chris William, Jim Haas, Marc Maleika.*

### faces.in (Finalist)

faces.in is a fast, fun way to discover friends nearby. Launched successfully with Vodafone as *Vodafone Radar*, faces.in is positioned globally to allow mobile operators to get into the game of social discovery and geo-location as a value-added revenue driver.



faces.in offers a highly entertaining experience on Android and iPhone smartphones and is also available via SMS text, a unique and crucial capability for developing markets, reaching an unmet audience of millions of users. *Team: Frederico Silva, Guilherme Portela Santos, Jorge Medeira, Paulo Dimas, Stanley Kugell, Taro Araya.*

### FIDESYS

FIDESYS is the first Russian multi-purpose CAE software for high-end structural analysis. It will eclipse international competition in terms of computation accuracy and hardware efficiency.



For a number of tasks commonly faced by industrial designers it will be the only product available in the market capable of high-accuracy simulations. In addition to software suite we provide a Web-based Cloud-computing SaaS version of the product which allows customers not to buy expensive one-year license but take advantage of “pay as you go” models. *Team: Anastasia Yangirova, Anatoly Vershinin, Eugene Moskvilin, Ivan Gromov, Svetlana Lavrenova, Vladimir Levin.*

### GoClapp

iOS developers know that they need to promote their work, but today's standards have not evolved towards the unique nature of apps and still base their process in driving traffic to web pages.



Pay per attention from GoClapp allows them to implement a reward system creating loyal users inside their apps. Campaign full control, trackability and a wide range of rewards will allow developers to create a closer relationship between their apps and users. Users will be rewarded with credits for every download they make which can be exchanged for paid apps for free or local deals, like a pizza slice at Pizza Hut or a burger at MacDonald's. *Team: Gonçalo Henriques, Hugo Castro, João Rocha*

### LikeHack

LikeHack provides next-generation services for personal content, discovery, and bookmarkers. It knows exactly what you need and provides the right links in the right time in your favorite way. It is very simple to start and use.



LikeHack's potential market includes more than 100 million people who are frustrated with information overload and spend more than 30% of their time searching and filtering information in the web.

- Unlike Google, LikeHack assesses content like you would;





The BGI Venture Competition is gaining in reputation as a place for investors to find capital-ready companies.

- Unlike StumbleUpon, LikeHack is very specific to your needs;
- And unlike others, LikeHack is a hands-down solution like Dropbox.

*Team: Dmitry Yanin, Jane Smorodnikova, Michael Kechinov.*

### **Track: Products & Services**

#### **D-Orbit (Finalist)**

D-Orbit develops propulsive devices to be installed on artificial satellites before launch—able to bring them back into the atmosphere, destroy them, or re-orbit them into a graveyard orbit when they stop working, in a quick, safe and controlled manner—providing sustainable access to Space.



D-Orbit offers satellite owners a reliable and cost-effective product to increase a satellite's operating life and to avoid costs from collisions with other spacecrafts or assets on Earth. D-Orbit provides an invaluable solution to “the problem” with Space. *Team: not available.*

#### **Educed**

World leader companies who develop software that cannot fail will find at Educad a tool to drastically reduce the effort and cost of delivering top quality high-integrity software. Educad's tool, PROVA, takes systems' early stage specifications and, using the world's most advanced mathematical algorithms, makes sure there are no errors in them. Up to 80% of effort in re-work and corrections can be saved.



People from Airbus, Rockwell Collins, NASA and Medical Devices companies classify our approach as “right on spot” and are willing to start using it as soon as possible. *Team: Alexandre Madeira, André Passos, Filipe Pedrosa, Joaquim Tojal, José Miguel Faria.*

#### **PetmyPet**

PetmyPet is an online community marketplace where pet lovers get together to obtain/provide personalized care to their pets: pet hosting, sitting, walking, transportation, and more.



PetmyPet is a disruptive solution that benefits everyone: owners find family environments for their pets, where they are loved and cared. Convenient and affordable options include comprehensive pet health insurance, carefully selected pet hosts, and 24-hour customer service. Pet hosts can earn money while doing something they love. PetmyPet revenues come from service fees charged over online bookings. *Team: Ana Afonso, Margarida Constantino, Priscila Rusa, Tiago Matias.*

#### **TradeDare**

TradeDare, incubated by Instituto Pedro Nunes, presents the project TradeDare B2B PaaS that allows stores to increase savings on production costs as well as optimize their stock management. The value proposal is increasing sales bottom-line between 1-5%.



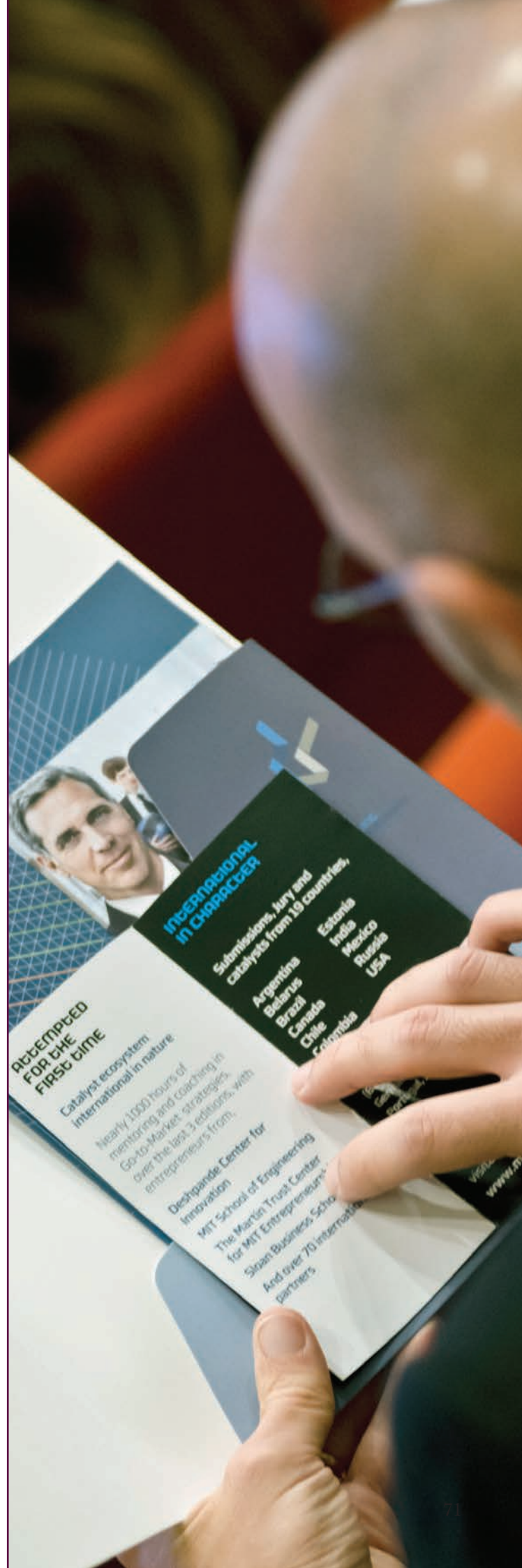
The innovation is present by a social media crowd sourcing algorithm that provides actionable business analytics for store managers. The potential global market value is 40 billion USD. *Team: Daniel Faria, Ömer Karişman, Tiago Sousa, Vasco Patrício.*

#### **youbeQ**

youbeQ is Google Earth with 3D buildings adapted to an avatar-centric interface to allow you to access geo-location information, be in touch with your network, communicate with other users and institutions, play games, and consume services and products supplied by Companies. It is a re-creation of real life in cyberspace.



Extremely intuitive, it is easily accessible to any kind of user. This platform allows an immersive experience in which users may go shopping, sightseeing, or meet people on the streets. We are hybridizing the world we know and creating a new gate to the web. *Team: André Santos, Hugo Grácio, José Moura, Luís Miranda, Rogério Coelho.*







### 3. Observation, Assessment, and Reporting

*“Academic Spin Offs (ASOs) economic performance (sales per individual in FTE) is highly dependent on internationalization dynamics – on average, firms that export and implement a foreign subsidiary outperform their domestic based counterparts.”*

Aurora Teixeira, Professor  
Faculty of Economics, U.Porto  
Associate Researcher  
CEF.UP, INESC Porto & OBEGEF



### 3.1 2012 Survey of Portuguese TTOs

In 2012 the third annual UTEN network survey of technology transfer offices was conducted to develop a more comprehensive view of technology transfer in Portugal. A short summary of key findings follows.

- The primary functions of TTO employees continue to be: grants and fund-raising (27%), intellectual property (18%), and entrepreneurship/spin-outs (14%) with smaller amounts of time devoted to coordination, licensing, and industrial liaison;
- On average, approximately half of the revenues received by TTOs are from grants, with another 20% from external fees and services; only one-fourth of TTO revenues are provided by their institution.
- Compared to last year, there was a substantial increase (42%) in the number of invention disclosures reported by the TTOs.
- There are no clear trends with patent applications, while there has been an upward or stable trend over time for the three main types of patents granted.
- Licenses, option agreements, and assignments in 2011 matched the strong number in 2010, and the trend over time continues to be positive.
- Total license income increased once again in 2011, by about 6% over the prior year.
- Research and development agreements were 38% higher in 2011 than in 2010.
- TTOs reported a large number of new companies established: 141 in 2011 compared to 95 in 2010.

#### Introduction

Twenty offices were contacted, and responses were received from 18 TTOs as of late October. TTO directors were promised that only aggregate results would be released and that no responses from individual TTOs would be disseminated. Unlike the prior two years, this year UTEN Portugal implemented the survey with MERIT of Maastricht University, under the European Commission's Recommendation on Knowledge Transfer and supported by the European Council's Resolution on Knowledge Transfer. UTEN and MERIT surveys were merged to decrease the response burden on Portuguese TTOs and to overcome the lack of international comparable data. TTOs were contacted initially in late September 2012, and responses were tabulated in October 2012. A second survey was sent to a larger group of Portuguese institutions including polytechnic institutes, associated labs and private research centers, to access their technology transfer results for the year of 2011. The responses received are included in the results provided to MERIT integrating the sample for the technology transfer study commissioned by the European Commission.

#### Organization and Budget

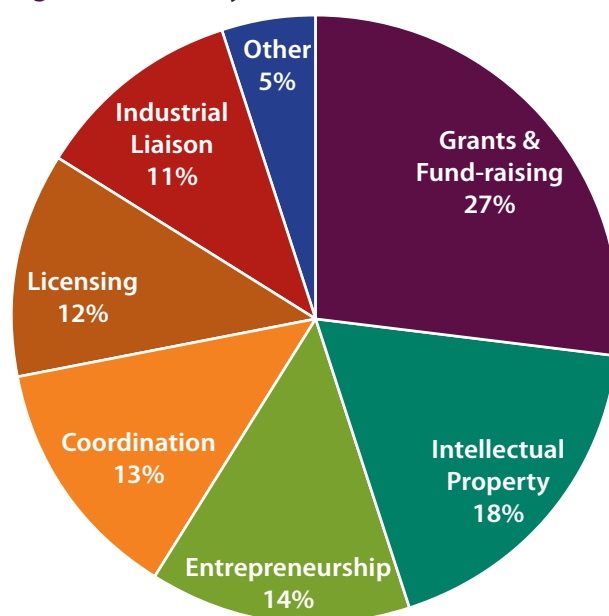
*Basic organizational structure:* Most TTO respondents are an integral part of their institutions. Two TTOs

are external organizations that provide technology transfer services to multiple institutions. Besides performing services for their universities, four TTOs serve government or non-profit research institutes, two serve incubators or a research institute, and two serve research parks.

*Maturity of TTOs:* Many of the TTOs are recently established with only two TTOs having been established for at least a decade. Others are more recent with one started in 2010 and another in 2012.

*Employee duties:* The number of full-time technical/professional employees ranges from 1 to 14 per office. Twelve of the 18 TTOs have five or fewer technical/professional employees. The offices that responded have a total of 81 technical/professional employees work in the offices of the TTOs that responded. Across the different TTOs, on average employees allocate their time to several key functions (figure 3.1).

**Figure 3.1 Primary functions of TTO staff**



*Employees' backgrounds:* More than half of the TTOs have employees with university qualifications in Management/Business Administration and Engineering/Natural Sciences. About one-fourth of the TTOs have employees with a background in Law. About one-fifth of the TTOs have employees with qualifications in Finance, and three TTOs (one-sixth) have staff with biomedical backgrounds.

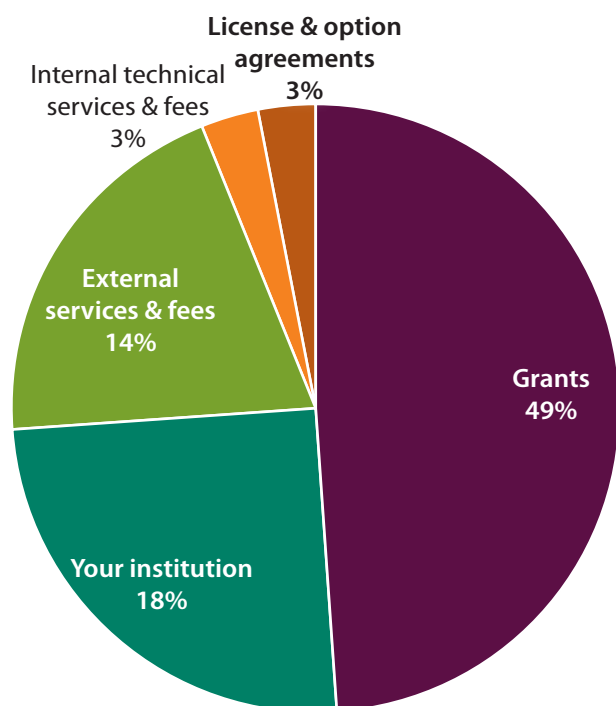
*Budget expenditures:* Expenditures vary considerably across the TTOs. At least four TTOs spent more than €200,000 and four others spent more than €100,000. The aggregate amount for all TTOs could not be calculated in 2011 as there were an insufficient number of responses. Of the TTOs providing expenditure information, approximately 70% was devoted to human resources, with nearly 20% allocated to patenting and the remaining funds spent on entrepreneurship.

*Sources of revenues:* As shown previously in figure 3.1, grants and fund-raising are an important task for TTOs.



Only one TTO in 2011 received all of its revenue from its home university. TTOs are in fact quite dependent on grants to perform their functions as nearly half of their revenues, on average, come from grants. In 2011, ten of the TTOs secured at least half of their revenue from grants, with three TTOs above 70%. Two other TTOs were entirely funded from external fees and services. On average in 2011, the TTOs received their revenues from sources as shown in figure 3.2. Compared to the prior year, TTOs increasingly relied on external fees and services and grants, and received a smaller proportion from their home institution.

**Figure 3.2 Sources of revenues (2011)**



*Services Provided:* Despite the diversity among TTOs in their budget expenditures and revenue sources, there is considerable similarity in what services are being provided. All TTOs:

- Create or support start-up companies based on their institution's inventions
- Raise awareness/disseminate information on intellectual property rights and entrepreneurship

At least three-quarters of TTOs:

- Assess the patentability of inventions
- Manage material transfer or confidentiality agreements
- Apply for patents
- Negotiate or arrange licenses
- Scout for new intellectual property and new technology
- Prepare grant proposals

More than half of TTOs:

- Provide training to faculty, researchers, or students

- Negotiate government-sponsored research contracts/grants
- Coordinate with business angel networks

In contrast, about one-third manage or coordinate an incubator facility and one in five manages a research/science and technology park. Other services noted by TTOs included providing consultancy services, drafting non-disclosure agreements, business idea competitions, searching research and developing competencies, and industrial liaison.

### *Intellectual Property and Commercialization*

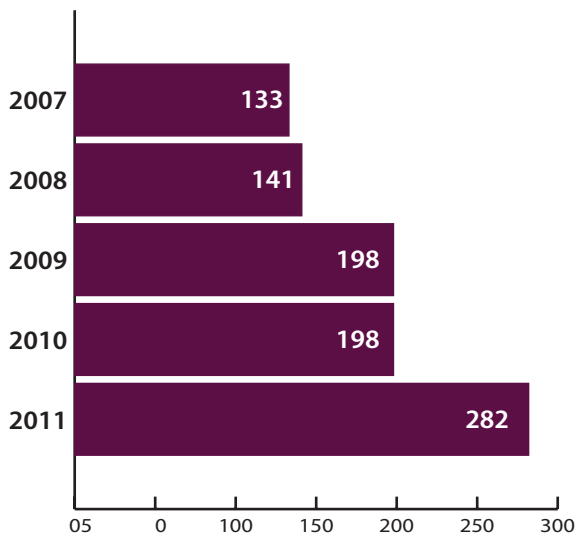
*Scope of patenting:* In 2011, all but three of the 16 TTOs responding to this question performed at least 90% of the patent applications through their offices. One reported handling less than half of the applications, and two others do not undertake any patent applications.

*Ownership of IP rights:* The universities own IP rights in nearly all cases. In three, inventors own some rights depending on contract negotiations, and in one university IP rights are owned by the schools.

*Royalties:* Seventeen TTOs provided information about royalties, and 15 reported that royalties are split between their institutions and the inventors in varying proportions. In eight of the institutions, royalties are split 50%-50%. In another seven institutions, the inventors receive 55% or more, including two institutions that provide 80% to inventors. One university alters the allocation depending on the total amount of royalties received—for smaller amounts the inventor receives a higher percentage, while for larger amounts the university receives more and the organizational unit receives some proportion. Compared to last year, inventors now are receiving a larger share at a number of institutions.

*Invention disclosures:* Compared to last year, there was a substantial increase (42%) in the number of invention disclosures reported by the TTOs. As shown in figure 3.3, invention disclosures in 2011 reached 282.

**Figure 3.3 Invention Disclosures ('07-'11)**



*Patent Applications (Priority Filings):* The trend is less clear on patent applications as shown below. In one category (provisional), the trend is clearly upward, while in the other four categories there are no clear trends. In 2011, there was one application in Spain and another in India.

Filings	2007	2008	2009	2010	2011
Provisional	4	23	66	80	100
Portuguese	71	88	76	78	69
PCT	29	30	74	43	17
EPO	12	13	12	4	6
USPTO	11	17	5	11	7

*Patent Applications by Subject Area:* More than half of the TTOs applied for some type of a biomedical (diagnostic, devices, pharmaceutical etc.) patent in 2011. Six of the TTOs applied for a patent related to computers or communication equipment, while four applied in the area of nanotechnology/new materials, and two in low or zero carbon energy technologies. Other areas in which TTOs applied for patents were agricultural sciences, life sciences, mechanics & electromechanics, and the food industry.

*Patents Granted:* The trends has been upward or stable over time for the three categories. In 2011, two TTOs reported receiving Canadian patents.

*Active Patents:* Compared to 2010, there were increases in the number of EPO patents (6%) and USPTO patents (26%) in 2011. PCT active patents declined by 5%. Because of changes in the data collection methodologies, the increase in the number of active Portuguese patents could not be determined precisely. The increase was a minimum of 56% and possibly as high as 85%. TTOs reported having active patents in Canada, France, Russia, Norway, Brazil, Japan, China, Australia, and South Africa.

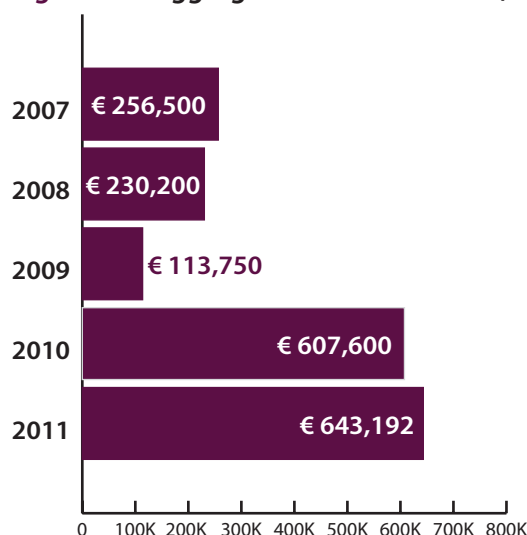
*Licenses, Option Agreements, and Assignments:* As in prior years, the large majority of the licenses, agreements, and assignments have been executed with Portuguese partners as shown below. The total in 2011 nearly matched the very strong number in 2010, and the trend over the past five years continues to be positive.

Partners	2007	2008	2009	2010	2011
Portuguese	24	32	38	56	52
EU	4	5	5	7	8
USA	5	3	5	4	2
Other Int'l	1	2	1	1	1
Total	34	42	49	68	63

About an equal number of licenses and options were granted to start-up companies and firms with fewer than 250 employees. The remaining licenses and options, about 20%, were granted to companies with more than 250 employees.

*License Income:* The total amount of license income increased once again in 2011, following the dramatic increase in 2010. Seven of the TTOs reported license income, with three TTOs reporting license income of at least €100,000 in 2011. Therefore the aggregate amount of nearly €650,000 is not due to a single transaction or single TTO. Three TTOs reported international license income.

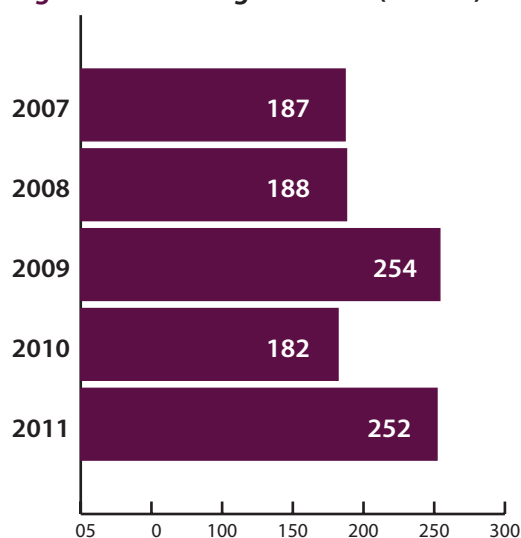
**Figure 3.4. Aggregate License Income ('07-'11)**



*Commercially Profitable Products:* Eleven TTOs indicated that their institution's licensed technology or knowledge had resulted in commercially profitable products or processes in the past three years.

*Research and Development Agreements:* TTOs reported a dramatic increase in the number of executed agreements in 2011, up 38% from the prior year. The number in 2011 essentially matches the strong performance in 2009 and considerably surpasses the levels in 2007 and 2008 as shown below.

**Figure 3.5. R&D Agreements ('07-'11)**



*Institutional Research Resources:* For the first time in this series of surveys, TTOs were asked questions about their institution's research resources. The total number of research personnel (researchers, technicians, and



administrative support personnel) at 14 institutions in 2011 was 22,377. Six TTOs reported more than 1,000 researchers each. The aggregate research budgets at nine institutions were €112,908,866, with two institutions accounting for three-quarters of the total. Privately funded research at institutions varied considerably. One TTO said 35% of total research expenditures came from private companies, a second TTO said that figure was 24% at their institution, and a third TTO reported 19%. One TTO each reported 12%, 11%, 10%, and 9%, while three TTOs reported 5%. Other TTOs did not provide a response.

*Spin-off & Start-Up Companies:* Data from the TTOs show that a large number of new companies are being established. In 2011, TTOs reported 141 new companies were established, while nine companies from prior years ceased operations. A more detailed enumeration and analysis of spin-off and start-up companies follows.

### 3.2 Performance of Portuguese Academic Spin-offs: Main Determinants<sup>1</sup>

#### *The context*

University Spin-Offs (USOs) [1] or Academic Spin-Offs (ASOs) [2] are firms whose products or services are based on scientific/technical knowledge generated within a university setting [3; 4], where the founding members may (or may not) include the academic inventor. In the European context, in general, and in the Portuguese, in particular, the promotion of the establishment of ASOs revealed to be a daunting and complex task [5; 6], especially because research institutions showed limited capacity for transferring scientific and technological knowledge to industry [7; 8]. Among the reasons for this incapacity are the cultural differences between the university and private sectors which, in part, reflect the lack of an entrepreneurial spirit within university environment [5], and the poor industry–university relations that characterize some EU countries, most notably Portugal, exacerbating the lack of university entrepreneurial orientation [9; 10].

To address such handicaps and difficulties for ASOs, in March 2007 the Portuguese Science and Technology Foundation (FCT), with the IC<sup>2</sup> Institute from The University of Texas at Austin, launched the University Technology Enterprise Network (UTEN). The project represented a significant investment in innovation by the Portuguese government with a specific goal of building a globally competitive and sustainable science and technology (S&T) transfer and innovation network managed by highly trained Portuguese professionals. UTEN's Portuguese member organizations include

universities, polytechnic institutes, associated R&D labs, university-linked incubators and science parks. On the whole, excluding official governmental entities (i.e., FCT and IPIN), UTEN includes 29 organizations: 17 university Technology Transfer Offices (TTOs), one TTO from a polytechnic institute, two associated R&D labs,<sup>2</sup> four university-linked incubators, and five science parks.<sup>3</sup> UTEN undertook, and still undertakes, its goals at an upstream phase of the technology transfer process by *training Portuguese technology transfer managers and staff* through value-added workshops and internships in select and diverse centers of expertise for 'on-the-job' international competence building and enhanced network development. UTEN also, at a more downstream phase *actively supports and mentors select, globally competitive Portuguese business ventures*.

Thus, one might argue that, at least in part, over this five year period (2007-2011), Portuguese ASOs associated to UTEN members might have benefited *directly*, through personal participation in UTEN events (e.g., conference, workshops, business meetings), and/or *indirectly*, through higher quality level of services provided by TTOs, Science Park staff, and Incubators staff who attended UTEN international events including internships. Given that a five-year period elapsed since UTEN's genesis, it is now critical to assess what effective (or potential) value has been realized by Portuguese ASOs associated to UTEN's members—either in terms of economic value or internationalization performance, and which were their main drivers.

#### *Methodology*

This study has undertaken an empirical analysis to assess the relevance of the determinants of the performance of Portuguese ASOs associated to UTEN members. For this assessment, we constructed and implemented a direct email survey to all 309 ASOs associated to UTEN's members analyzing, in a quantitative and qualitative manner, how ASOs' innovation, international, and economic performance evolved from 2008 onwards, and which were their main drivers.

Existing literature on ASOs' performance refer three main groups of determinants: 1) those related to the entrepreneur or the team of founders (size, education and industry experience of the founding team) [11-14]; aspects concerning the firm/business (source of creation; innovation; internationalization; market strategies; demographic traits) [14-18]; and contextual factors (S&T support and obstacle mechanisms; university characteristics; regional factors) [14; 16; 19]. In a simplified away, the general econometric specification used stands as follows:

$$Performance_i = \beta_0 + Entrepreneurs + Business + Context + e_i$$

Where  $i$  is the subscript for each ASO and  $e_i$  is the sample error term and where:

2 INESC Porto and IMM

3 The membership of UTEN evolved since its genesis. This composition is the one that was in stake in October 2012.

1 *Performance of Portuguese Academic Spin-offs: Main Determinants* is the work of Aurora A. C. Teixeira with the research assistance of Marlene Grande. Previous related studies appear in the 2009-2010 UTEN annual report, *Technology transfer and commercialization activities in Portugal: A quantitative overview*, p. 52-55 and *Portuguese Academic Spin-offs and the Role of Science and Technology Transfer Organizations*, p. 55-61; and the 2011 UTEN annual report, *Characters and Trends of Academic Spin Offs (ASOs) associated to UTEN partners*, p. 74.

$$Entrepreneurs = \hat{\beta}_1 N_{founders} + \hat{\beta}_2 Education + \hat{\beta}_3 Experience$$

$$Business = \hat{\beta}_4 Source + \hat{\beta}_5 Innovation + \hat{\beta}_6 Int'lization + \hat{\beta}_7 Market + \hat{\beta}_8 Demographic$$

$$Context = \hat{\beta}_9 Support + \hat{\beta}_{10} Obstacles + \hat{\beta}_{11} University + \hat{\beta}_{12} Region$$

Regarding the variable *performance* as earlier referred, we considered three dimensions: innovation, international and economic performance. The *economic* performance is measured as sales per person (in Full Time Equivalent or FTE) in 2011 (in log) [14], whereas the *innovation* performance is a dummy variable, which assumes the value 1 for ASOs which perform R&D and have patents [20] over the period 2008-2011 and 0 otherwise. The *international* performance reflects ASOs commitment to foreign markets, being a dummy variable, which assumes the value 1 when the ASOs exported and/or have established a foreign subsidiary [21] over the period 2008-2011.

The proxies for the determinants of performance (i.e., the model's the independent variables) are described in the table 3.1, together with the study's main hypotheses. In order to obtain the proxies for the variables that enabled to test the study's main hypotheses, we constructed and implemented a direct questionnaire to ASOs linked to TTOs members of the UTEN network. We identified 309 ASOs associated to UTEN Portuguese members. Out of this total, 286 constituted our effective/target population, as 23 firms were unreachable, having presumably ceased operations. After two months we obtained responses from 99 ASOs; this represents a response rate of 34.6% (Table 3.2). Of the 99 responding ASOs, 90 provided complete and usable data. It is possible to observe the relative over representativeness of ASOs associated to U. Porto, U. Minho and U. Aveiro and an under representativeness of ASOs associated to U. Beira Interior and U. Técnica de Lisboa.

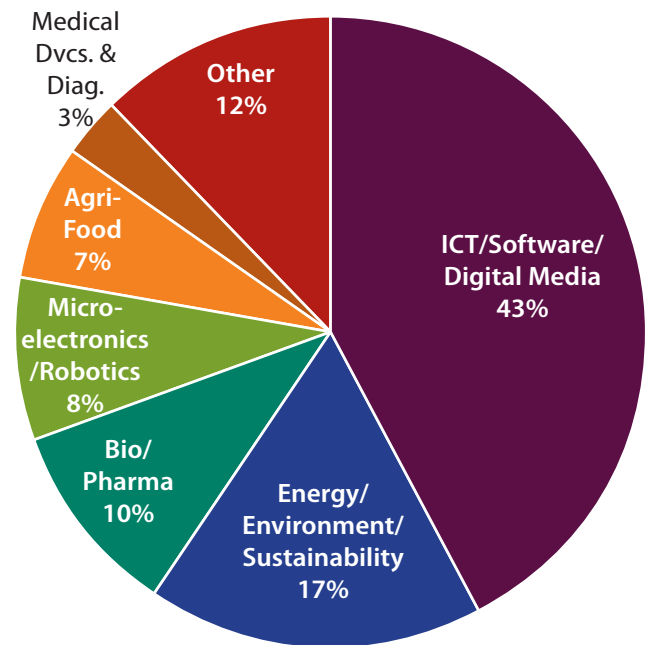
## Results

### Descriptive results

In 2011, the whole sample of firms (90 respondent ASOs with valid data) had at service 960 individuals (264 founders plus 696 collaborators), sold about €26 million, invested €6 million in R&D activities (representing a global average R&D intensity of 23%), and owned 15 patents. Most of these firms operate in ICT/Software/Digital Media (43%), Energy/Environment/Sustainability (17%), and Bio/Pharma (10%). These respondent ASOs are young, and were mainly created after 2006, 2008 being the year when most of the ASOs (25, i.e., 25%) initiated their activity. About 78% of the total respondent firms were created in 2007 or later, presenting an average age of six years in business.

Firms average one year between venture creation and the initiation of a sales, three years between the first sales and the first exports, and five years before establishing a subsidiary.

**Figure 3.6** Distribution (%) of ASOs by sector of activity



The number of respondents include in this figure is 99. The sector 'Others' includes predominantly *training & consultancy in finance* (25%), *engineering* (25%), *architecture* (8%), *cosmetics* (8%) and *pedagogic activities* (8%). The remaining focuses on *research & specialized services* (16%), and on *social activities aimed at the insertion of young graduates in the labor market* (8%).

On average, the ASOs' founding team was composed of two to three individuals, and in 68% (33%) of the cases the founding team included at least one engineering (economics/management) graduate. About three fourths of the firms included founders with previous industry experience. The respondent ASOs, as expected, are quite small. In Full Time Equivalent (FTE), the size of the respondent ASOs is 5 individuals (including founders).

By 2011, about 48% of the ASO exported (in ICT/Software/Digital Media and Microelectronics/Robotics this figure reaches 60%), and 42% ASOs expected to start exporting in a nearby future. Approximately 15% of the ASO had established, by 2011, a foreign subsidiary. It is important to highlight this quite distinctive feature between ASOs and the remaining Portuguese SMEs. According to INE's data (referring to 2007-2009 period), only 10% of the 348,552 existing SMEs exported, a far lower figure than that of ASOs' (48%). This is quite promising given the well known structural external trade imbalance of Portugal and the need to overcome it given the economy's rampant debt.

The respondent ASOs present yearly sales per person (in FTE) of about €31 thousand. This figure, although quite below the national value for SMEs (€87 thousand), varies significantly depending on the sector considered, reaching €117 thousand in Medical devices/diagnostics and €21 thousand in ICT/Software/Digital Media.

The innovative traits of the sample's ASOs are quite heterogeneous. By 2011, almost 30% of the ASOs did not invest in R&D activities, and of those that invest,



**Table 3.1 Hypotheses and proxies for the relevant variables of the ‘theoretical model’**

Determinant group	Hypothesis	Proxy for the independent variable	Source
Entrepreneurs	Number of founders	H1: ASOs with higher number of founders tend to outperform their smaller counterparts. # of founders (in ln)	Questionnaire
	Education	H2a: ASOs whose founders have an economic or managerial education outperform the ones whose founders possess other type of education background. Some of the founders has an Economic or managerial degree (dummy- 1:yes; 0:no)	Questionnaire
		H2b: ASOs whose founders have an engineering related education outperform the ones whose founders possess other type of education background. Some of the founders has an Engineering degree (dummy- 1:yes; 0:no)	Questionnaire
	Experience	H3: ASOs whose founders have previous industry experience outperform those whose founders do not possess industry experience. Same-industry experience (dummy- 1:yes; 0:no)	Questionnaire
Business	Source of creation	H4: ASOs created by firms outperform those created by academics. ASOs created by firms (1) or by academics (0) [dummy]	Questionnaire
	Innovation	H5a: ASOs with higher innovative value (patents) tend to outperform ASOs that do not possess patents. # of accumulated patents (2008-2011)	Questionnaire
		H5b: ASOs characterized by higher intensity in Research and Development (R&D) outperform the remaining ASOs. R&D intensity (2008-2011)	Questionnaire
	Int'lization	H6a: Export oriented ASO outperform the ones that do not export. Exported (dummy- 1:yes; 0:no)	Questionnaire
		H6b: ASOs that have established a foreign subsidiary outperform the remaining ASOs. Established of foreign subsidiary (dummy- 1:yes; 0:no)	Questionnaire
		H6c: Internationalized ASOs outperform the remaining ASOs. Exported &/or established of foreign subsidiaries (dummy- 1:yes; 0:no)	Questionnaire
	Market strategies	H7a: ASOs which operate in the global market outperform the ones that produce for the domestic market. Geographical reach of sales (dummy- 1:global; 0:domestic)	Questionnaire
		H7b: ASOs producing for the mainstream market outperform the ones producing for niche markets. Market segment (dummy- 1:mainstream mkt; 0: niche mkts)	Questionnaire
	Demographic traits	H8a: ASOs more experienced in business outperform their less experienced counterparts. # of years since creation (in ln)	Questionnaire
		H8b: Larger ASOs outperform their smaller counterparts. # of employees plus founders in terms of FTE (in ln)	Questionnaire
Contextual	S&T support mechanism*	H9a: ASOs that resort to technology transfer support from TTOs outperform the remaining ASOs. ASO resort to the support of the TTO (dummy- 1: yes; 0: no)	Questionnaire
		H9b: ASOs that attribute greater importance to the S&T support mechanisms respecting a given set of items. High relevance attributed to the given item (dummy – 1: if ASO considered highly important; 0: otherwise)	Questionnaire
	Obstacles perceived**	H10: ASOs that perceive the item as a major obstacle for its activity tend to underperform the remaining ASOs. High relevance attributed to the given obstacle (dummy – 1: if ASO considered a highly important obstacle; 0: otherwise)	Questionnaire
	University characteristics	H11a: ASOs that are associated to Universities with higher pool of scientific knowledge tend to outperform the remaining ASOs. Scientific pool of knowledge (WOS publications per researcher) (2000-2007) (in ln)	Universities' web sites
		H11b: ASOs that are associated to Universities with higher proportion of research excellence tend to outperform the remaining ASOs. International patent pool per 1000 researchers (2010) (in ln)	Universities' web sites
		H11c: ASOs that are associated to Universities with higher pool of advanced applied/commercialized knowledge tend to outperform the remaining ASOs. Proportion of Research units with classified with 'Excellent' or 'Very Good' by the FCT	Universities' web sites
	Regional factors	H12a: ASOs located in higher economic developed regions outperform those from less developed regions. Index of purchasing power per NUT III regions (in ln)	INE
		H12b: ASOs located in predominantly urban regions outperform those allocated in intermediate or rural areas. Urban (1) versus Rural/intermediary (0) regions (dummy)	OECD 2010 Regional Typology
	Sector (default: ICT/ Software/ Digital Media)	Energy Dummy variable: 1 if the ASO operates in Energy/ Environment/ Sustainability	Questionnaire
		Bio Dummy variable: 1 if the ASO operates in Bio/ Pharma or Medical devices/diagnostics	Questionnaire
		Micro Dummy variable: 1 if the ASO operates in Microelectronics/Robotics	Questionnaire
		Agri-Food Dummy variable: 1 if the ASO operates in Agri-Food	Questionnaire
		Consultancy Dummy variable: 1 if the ASO operates in Consultancy related activities including training and other specialized services	Questionnaire

\* S&T support mechanism = Resource access; Network and business advice; Financial/capital advice and support; IPR support)

\*\* Obstacles perceived (U-I relations; Institutional, regulatory and government; Financial; Managerial; Infrastructures)

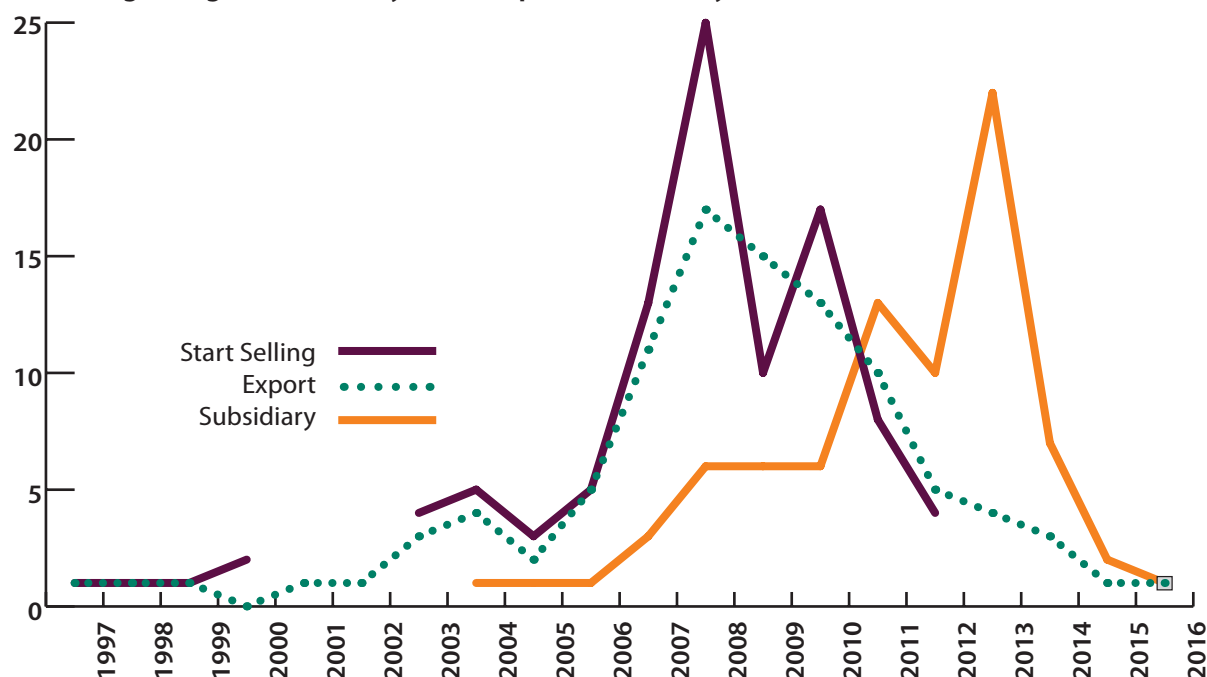
Source: Portuguese Institute of Industrial Property (INPI)

**Table 3.2** Representativeness and distribution of ASOs by TTO and University (reference year: 2012)

Associated University [target population; sample; response rate (%)]	UTEN partner associated to Technology Transfer	Population by 2012	Target Population	Sample	Effective Response rate. in %	% in the Target Population [sample]
U. Minho [37; 18; 48.6%]	Avepark/ Spinpark	14	12	7	58.3	12.9 [18.2]
	TecMinho	29	25	11	44.0	
U. Porto [64; 31; 48.4%]	UPIN	3	3	2	66.7	22.4 [31.3]
	UPTEC	54	53	22	41.5	
	INESC Porto	9	8	7	87.5	
U. Aveiro [11; 6; 54.5%]	UATEC	11	11	6	54.5	3.8 [6.1]
U. Beira Interior [26; 5; 19.2%]	UBI-GAPPI	5	5	2	40.0	9.1 [5.1]
	Parkurbis	23	21	3	14.3	
U. Coimbra [27; 8; 29.6%]	OTIC-UC	5	5	3	60.0	9.4 [8.1]
	IPN	23	22	5	22.7	
U. Nova Lisboa [48; 11; 22.9%]	Gab. de Empreendedorismo (FCT-UNL)	20	20	6	30.0	16.8 [11.1]
	Madan Parque	29	28	5	17.9	
U. Lisboa [2; 2; 100%]	IMM	2	2	2	100.0	0.7 [2.0]
ISCTE [4; 1; 25.0%]	INDEG	4	4	1	25.0	1.4 [1.0]
U. Técnica de Lisboa [35; 6; 14.3%]	OTIC-UTL	1	1	0	0.0	12.2 [6.1]
	Inovisa	3	3	2	66.7	
	TT@IST	4	4	4	100.0	
	Taguspark	30	27	0	0.0	
U. Algarve & U. Évora [30; 11; 36.7%]	CRIA	32	24	10	41.7	10.5 [11.1]
	UÉvora	3	3	0	0.0	
	Sines Tecnopólo	3	3	1	33.3	
U. Algarve & U. Évora [30; 11; 36.7%]	GAPI Madeira	1	1	0	0.0	0.7 [0.0]
	TECMU Madeira	1	1	0	0.0	
All		309	286	99	34.6	100 [100]

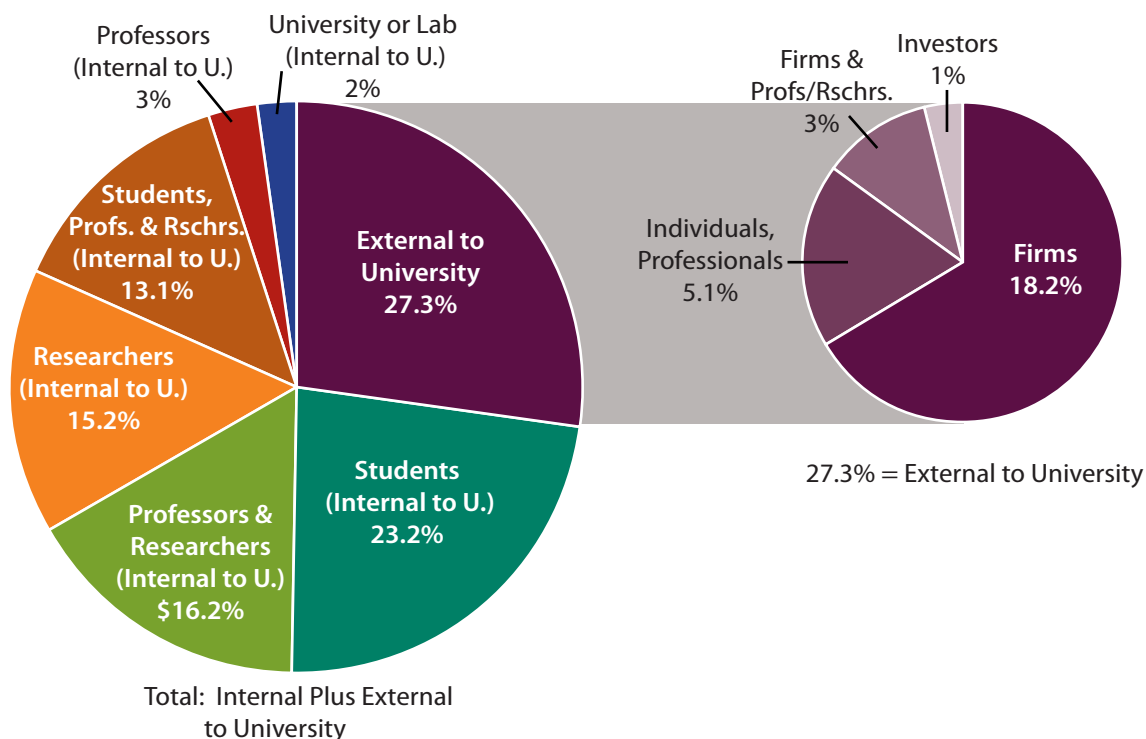
Source: Portuguese Institute of Industrial Property (INPI)

**Figure 3.7** Beginning of the activity/sales/exports/subsidiary of ASOs





**Figure 3.8 Distribution (in %) of ASOs by source of creation**



16 firms (that is, 29% of the relevant total) presented a R&D to sales ratio closer or well above 100%, justified by very low sales compared to the corresponding R&D expenditures. Moreover, in terms of accumulated patents (over the period 2008-2011), only 22% of the firms presented at least one active patent. On one hand, this might be explained, by the high share of companies which do not rely on patents as a tool to protect and benefit from the knowledge exploited, and, on the other hand, by the companies' relatively laggard positioning in terms of the sector's technological frontier.

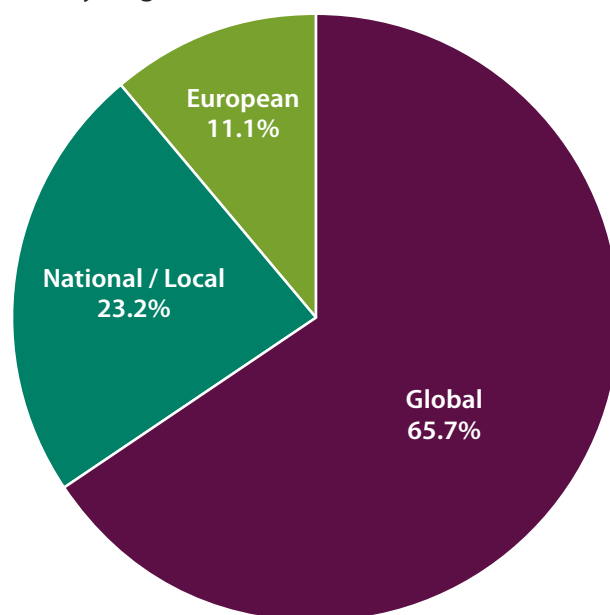
Firm creation was more commonly sourced *internal to the university*—researchers, who account (in combination or in isolation) for 47.5% of the total firms. Students and professors are also relevant sources of ASOs' creation accounting for about 36%. External sources represent 27% of the total.

In about one third of the ASOs surveyed, at least one of the founders had previous experience in the (same) industry. Additionally, in 69% of the firms at least one of the founders had a degree in Engineering and 32% in Economics/Management. It is worth noting that 23% of the ASOs had a founding team which included at least one engineer and one economist/management graduated individual.

The vast majority of the firms (75%) have at the present time marketable products/services. Notwithstanding, about 15% of the surveyed firms are at a very upstream phase in the product value chain, namely the idea or proof-of-concept phase.

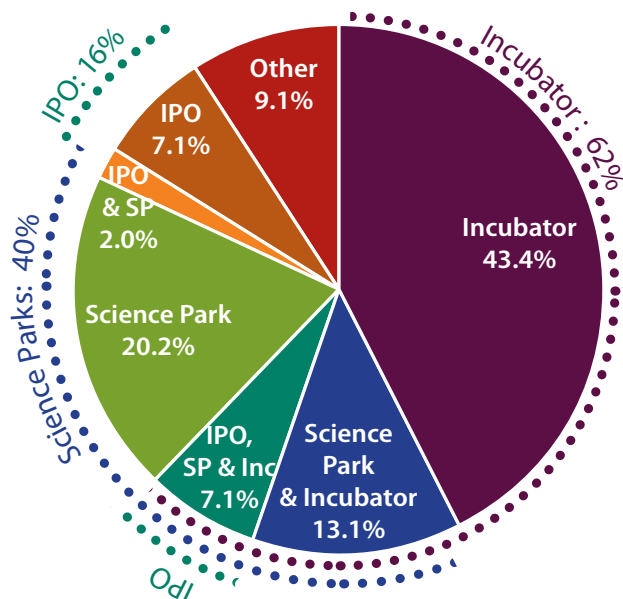
The bulk (66%) of the ASOs claimed to operate for global markets, whereas 23% presents an inward, domestic market strategy.

**Figure 3.9 Distribution (in %) of the Portuguese ASOs by target market**



Almost all firms have recognized benefit from technology transfer infrastructures, most notably incubators (62%) and Science Parks (40%). The demand for services from Intellectual Property Offices (IPOs) was relatively rare (16%), which might reflect, in part, business activities that do not rely on highly complex and novel technology (such as require intellectual property rights protection). Such business activities also forego the intrinsic fragilities associated with such firms in terms of meeting required minimum resources and competencies.

**Figure 3.10 Distribution (in %) of ASOs by the use of S&T infrastructures**



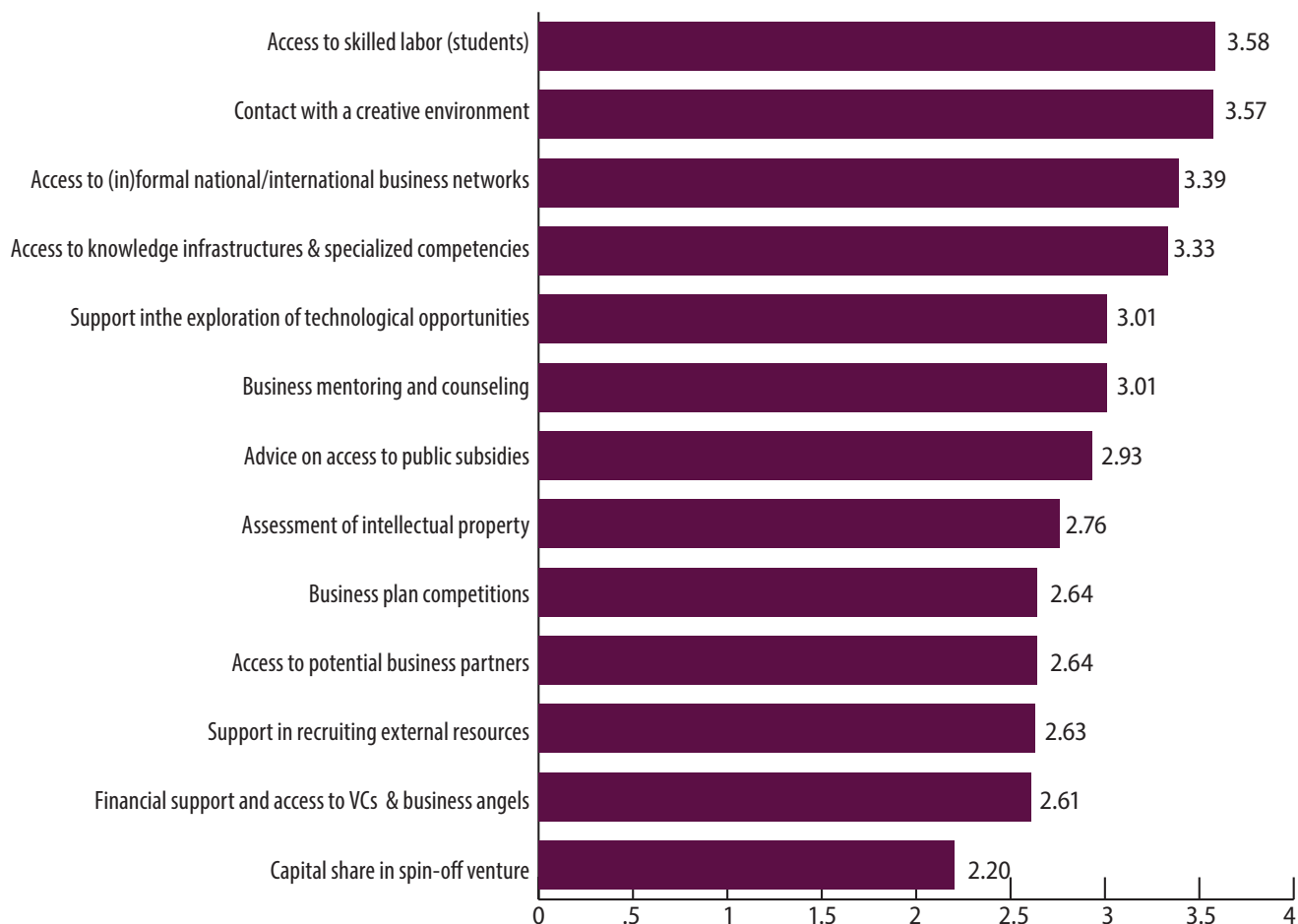
The most important support mechanisms associated to technology transfer infrastructures are, according to the respondent firms, *Access to skilled labor (students)*,

*Contact with a creative environment*, and *Access to (in)formal business networks on national and international basis* (figure 3.11).

About 63% of the firms consider *Access to skilled labour (students)* as an important or very important support mechanism associated to S&T system. *Contact with a creative environment* is also highly important for 60% of the firms, whereas about 55% of the respondent firms attribute high importance to the *Access to knowledge infrastructures and specialized competencies* and the *Access to (in)formal business networks on national and international basis*.

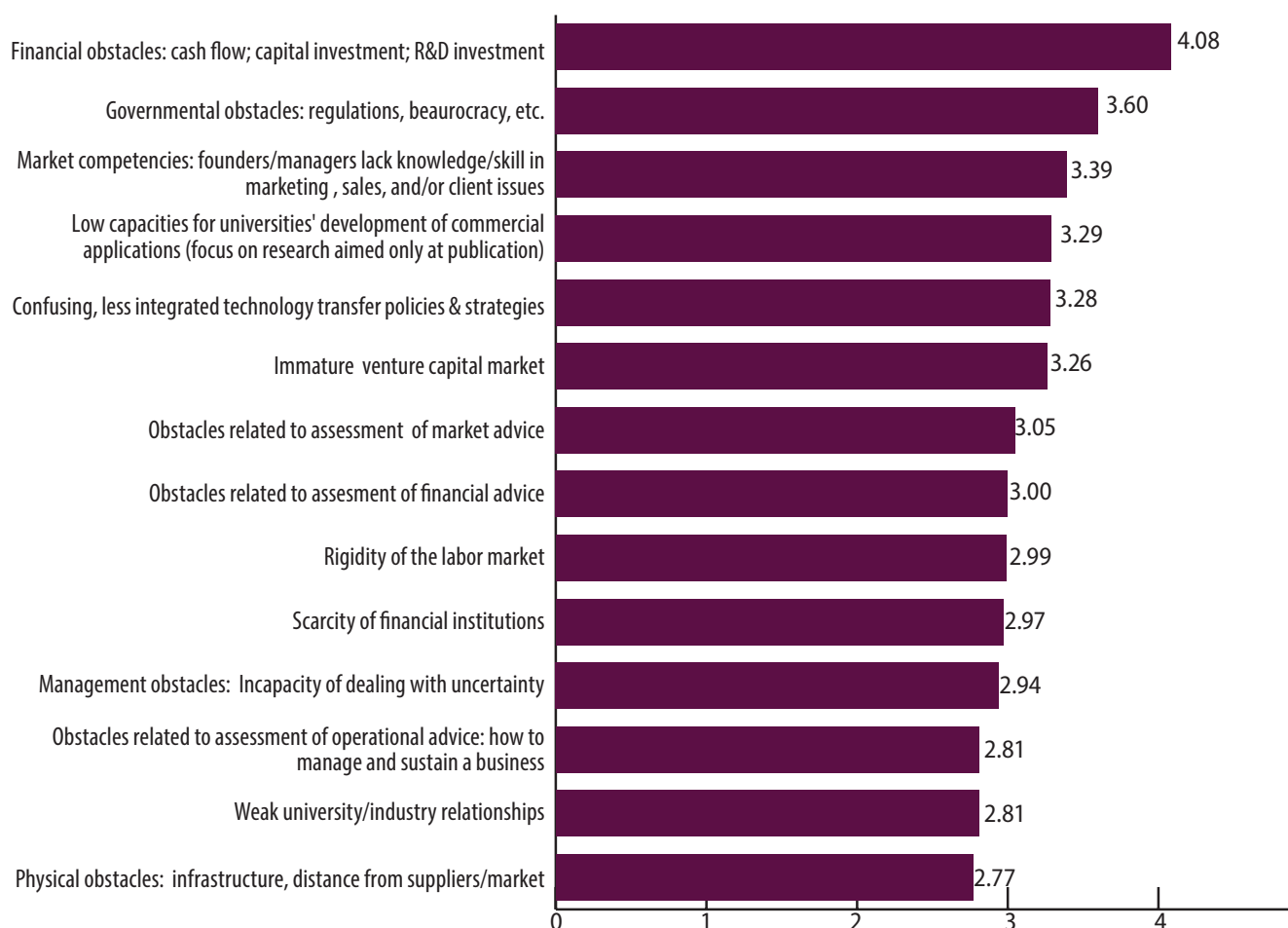
According to the respondents, the most important obstacle to the firm's development is *financial* in nature (cash flow; capital investment; R&D investment), although *governmental obstacles*, namely regulations and bureaucracy are perceived as highly detrimental to ASOs development (figure 3.12). ASOs internal factors, namely related to *market competencies* (lack of knowledge/skills by the company's founders/managers on marketing, sales and clients issues) emerge as a reasonable important obstacle. The *low capacities for universities' development of commercial applications (focus on research aimed only at publication)*, and *confusing and less integrated technology transfer policies and strategies* are also regarded as important obstacles to ASO development. The *immature venture capital market* is also viewed as

**Figure 3.11 Importance attributed by ASOs to available technology transfer support mechanisms**





**Figure 3.12 Obstacles to the development of their business perceived by ASOs**



an important, if less critical, hindrance to ASO firms' progress.

### 3.2. Determinants of performance

The estimation of econometric models (logistic regressions for innovation and internationalization related performance and linear regression for economic performance), permits to identify the critical drivers of the performance of Portuguese ASOs over the period in analysis, 2007-2011.

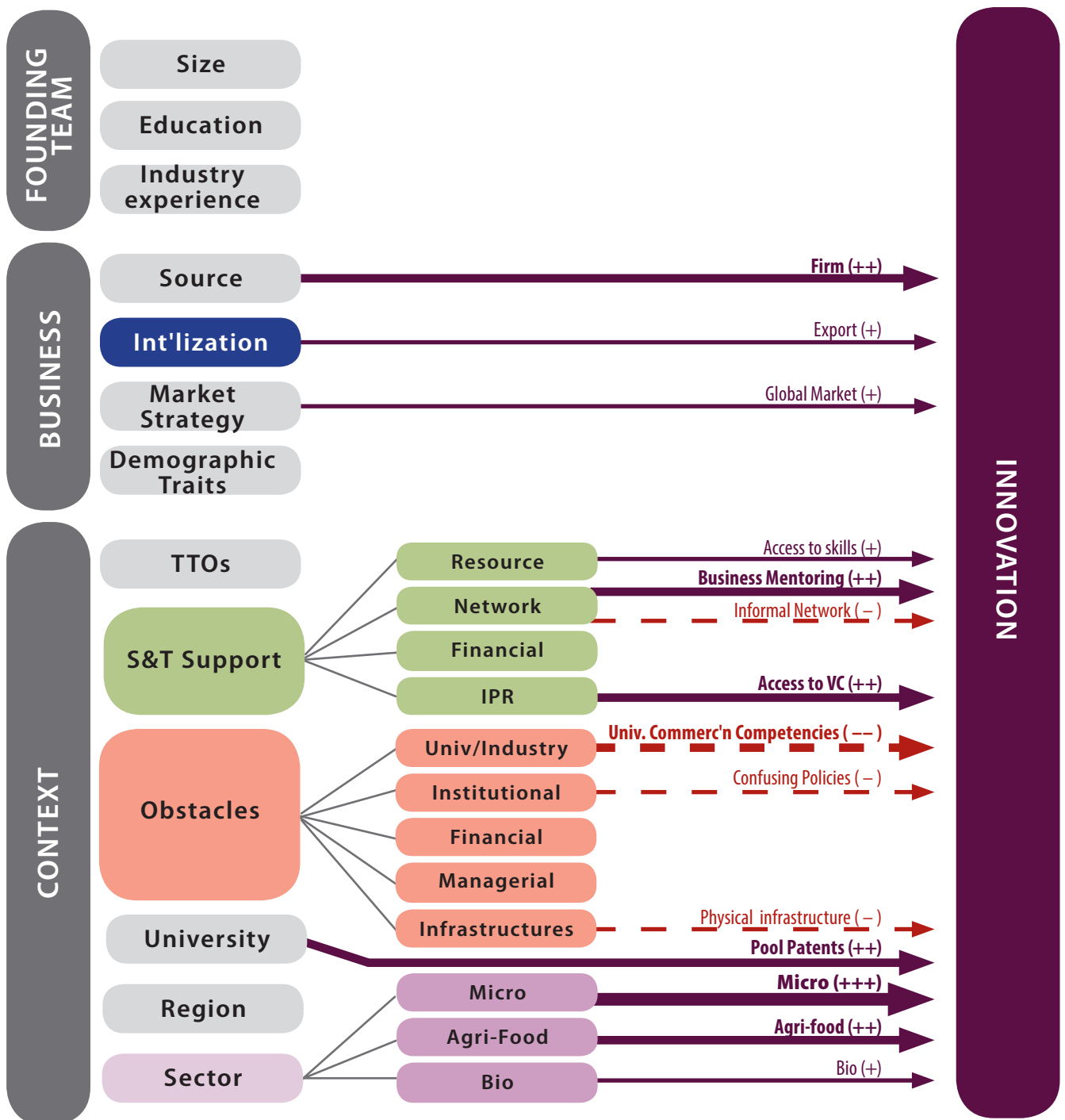
Concerning the performance in terms of innovation, results convey that, on average, and other factors being held constant, ASOs whose source of creation was firms tend to a larger extent than ASOs created by university related individuals (professors, researchers, students) to perform R&D activities and own patents (figure 3.13). Moreover, other business related factors, most notably the outward characteristics of the ASOs emerge as highly significant. Export led firms and those that claimed to operate in global markets are more likely to be innovative.

Contextual factors seem to be critical to explain the innovative performance of Portuguese ASOs. In particular, the importance firms attribute to some S&T support mechanisms are significantly connected to innovativeness – ASOs that recognize that *Access to*

*skilled labor (students), Business mentoring and counseling, Financial support and access to venture capital and business angels* are quite important support mechanism tend, on average, to be more likely to perform R&D activities and own patents. Moreover, those firms that downplay the *Access to (in)formal business networks on national and international basis* as a critical support mechanism are also, on average, more innovative. ASOs that do not perceive *Confusing and less integrated technology transfer policies and strategies* and *Low capacities for universities' development of commercial applications (focus on research aimed only at publication)* as critical obstacles to their activities tend, on average, to perform better than the remaining ASO. Interestingly, ASOs that are associated to Universities with a larger pool of advanced applied/commercialized knowledge (that is, high accumulated value of international patents) tend to outperform the remaining ASOs. Finally, compared to ASOs operating in ICT/Software/Digital Media, ASOs from Microelectronics/Robotics, Agri-Food and Bio/Pharma and Medical devices/diagnostics, tend to be more innovative.

Contextual factors lose relevance when one analyzes ASOs' international performance (i.e., the propensity of the firm to export and/or establish a subsidiary abroad) (figure 3.14). Notwithstanding, the perception that there is a weak relationship between university or that no

**Figure 3.13** Determinants of the innovative performance of Portuguese ASOs



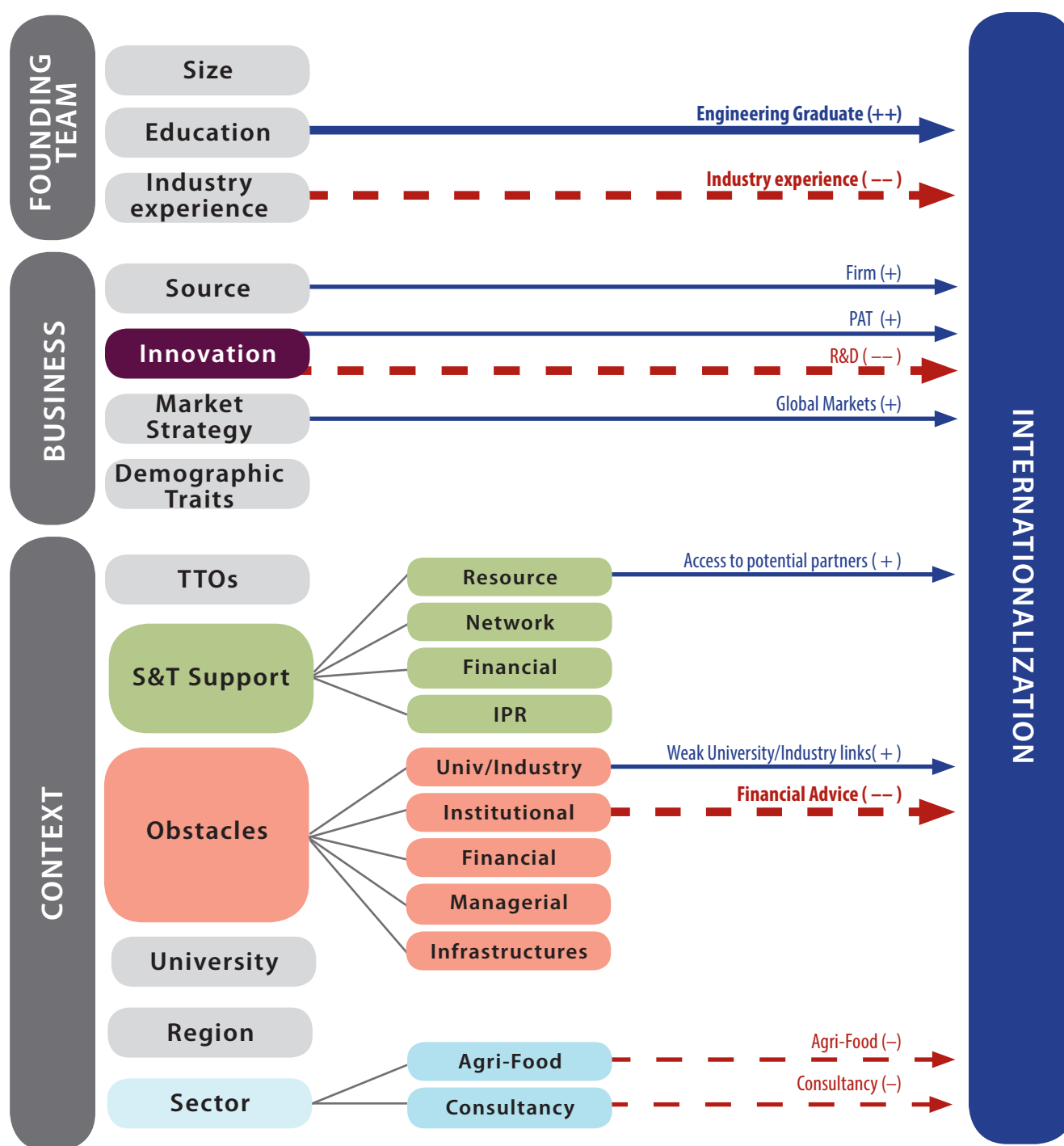
substantial difficulties on obtaining advice on financial issues arise emerge positively and significantly related to international performance. Innovation, particularly through the accumulation of patents, highly contributes to the international commitment of ASOs'. This latter is also fostered by founding teams that includes at least one engineering graduate. Industry experience by some member of the founders' team do not seems to significantly contribute to the outward characteristics of the ASOs. Finally, ASOs that recognize the *Access to potential partners with business qualities* as a critical support mechanism of S&T infrastructures tend, on average, to

export and/or establish foreign subsidiaries to a larger extent than the remaining.

ASOs economic performance (sales per individual in FTE) is highly dependent on internationalization dynamics – on average, firms that export and have implemented a foreign subsidiary outperform their domestic based counterparts. Moreover, the human capital of the founding team emerges here as an important driver of economic performance. Specifically, results convey that for the sample in analysis, ASOs whose founding teams have economists/management



**Figure 3.14** Determinants of the international performance of Portuguese ASOs

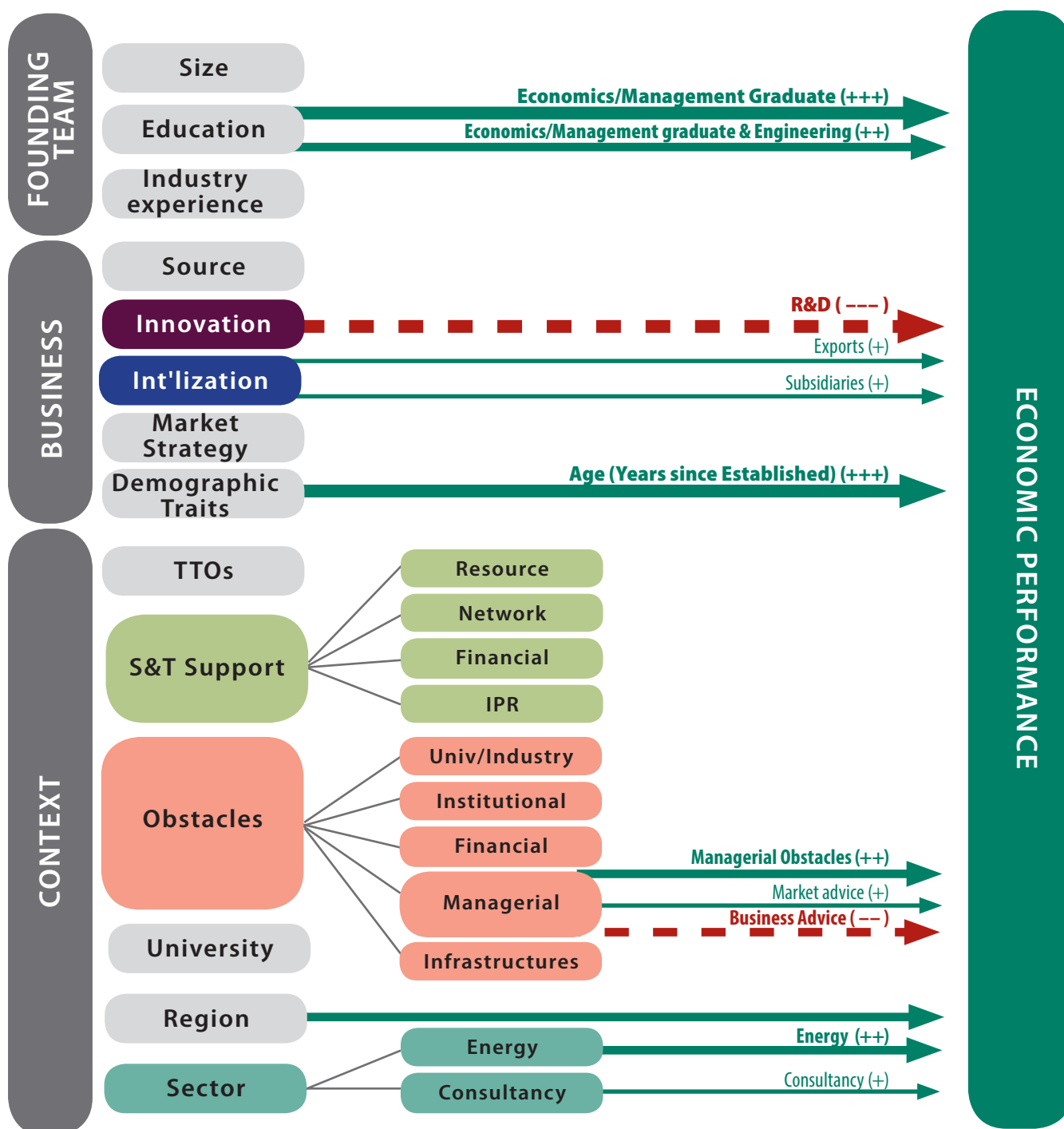


graduate individuals or combine engineers with individuals with business related skills tend to present higher levels of sales per capita. Business experience of the organization also helps, as evidenced by the statistical significance of the ASOs age (period of time that the firm is in activity). It worth highlighting that the ASOs that perceive to a larger extent their own internal difficulties and handicaps, most notably, incapacity of dealing with uncertainty, and lack of knowledge/skills by the company's founders/managers on marketing, sales and clients issues, are the ones better positioned in terms of economic performance.

### 3.3. Top performers ASOs: a brief qualitative overview

Based on the performance indicators used in the econometric estimations, we identified 16 top performers ASOs (table 3.3, p. 88). The main distinctive trait of these firms is, beside their relatively high sales per capita (economic performance), the outward looking character of their business operations. Indeed, over 80% of the top performers operates in the global and/or European markets, with 65% exporting and/or have established a foreign subsidiary. Within three years time, practically all top performers are expected to be internationalized (that is, exporting or performing foreign direct investment).

**Figure 3.15** Determinants of the economic performance of Portuguese ASOs



Given the internationalization priority for value generation and economic sustainability of Portuguese ASOs, some of the top performers highlighted the potentialities of the recently launched program of UTEN, US Connect. According to Marta Ferreira, Inovapotek CEO, "US Connect is a great opportunity to get in a sustained and grounded manner into the U.S. market."

For Bioalvo's Project Manager & Executive Assistant, Maria Ant3nia Pereira, the US Connect program enhanced their internationalization process, which already led to a first contract with an American

pharmaceutical company, and deepened the business network with U.S. firms, enabling to maintain regular contacts with potential future business partners. For this company's representative, UTEN represents "A catapult to enter the American market with an independent quality label and given by highly regarded local agents, with access to unique expertise."

The participation in some of the UTEN's activities (e.g., Workshops) enabled not only the entry into new external markets but, according to Jo3o Saramago Tavares (Science4you), has enabled the firm to find new partners in the national market.



Figure 3.16 Top performers ASOs from Bio/Pharma and Energy/Environment/ Sustainability sectors

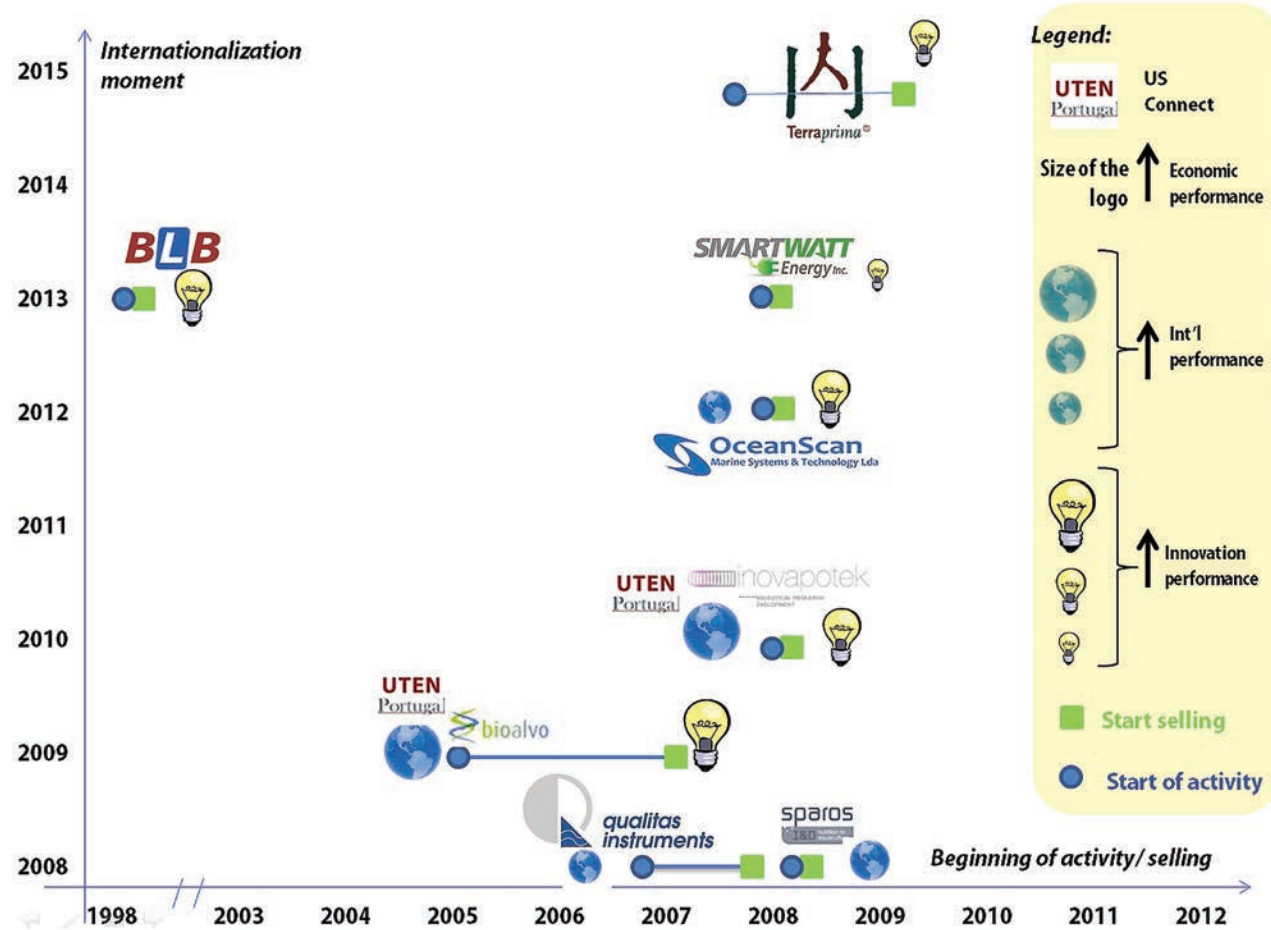
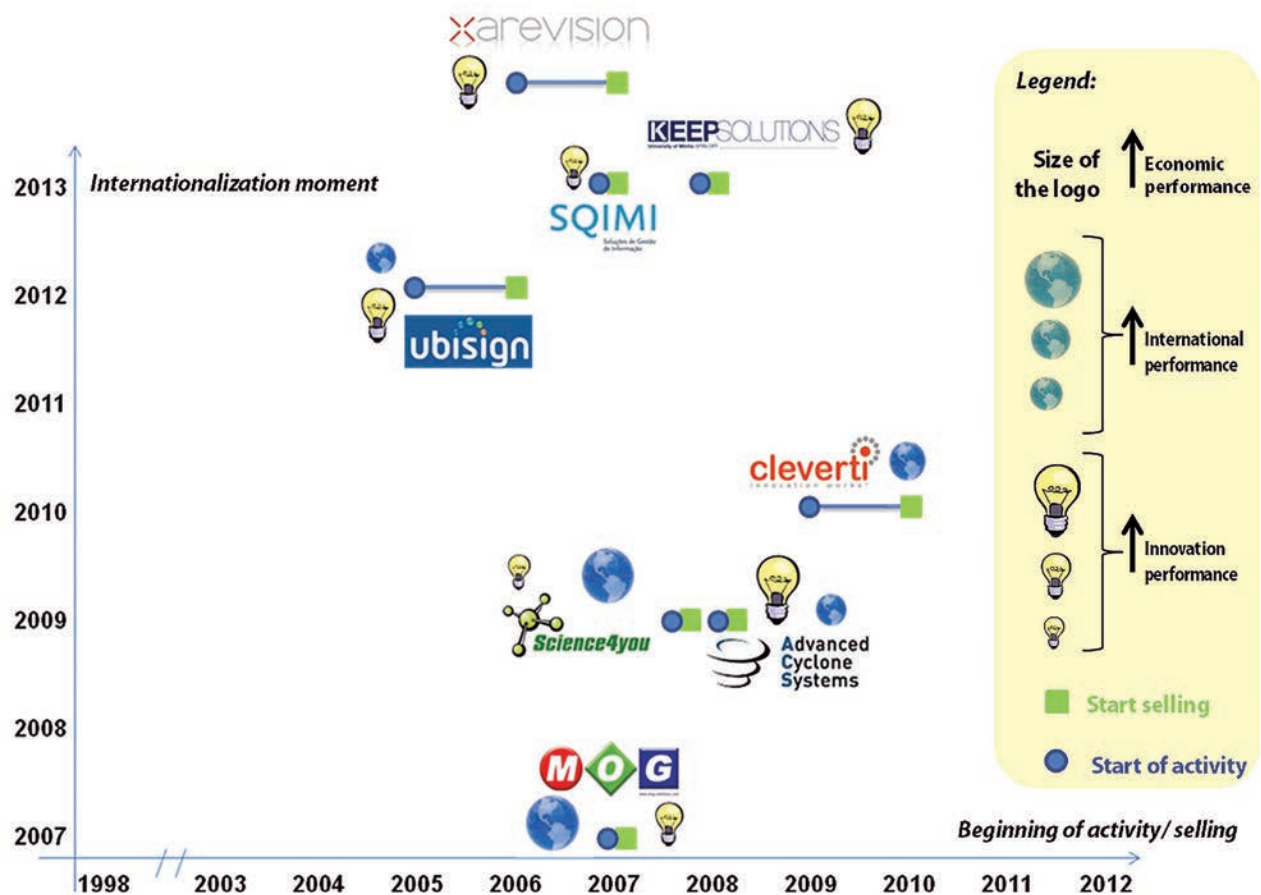


Figure 3.17 Top performers ASOs from ICT/Software/Digital Media and Microelectronics/ Robotics



Although the importance of UTEN for company's development is recognized by some of the top performers, arguing that the UTEN program represents "an opportunity for the dissemination and growth for any company" (João Saramago Tavares, Science4you) or "an interesting opportunity for future business areas" (Tiago Domingos, Terraprima CEO), they nevertheless point the need for improvements and re-focus in UTEN's reach and operations.

Specifically, clearer information on what are the competencies and outputs of the UTEN's staff who work directly with the companies is on demand (Maria Antónia Pereira, Bioalvo).

Moreover, the network should increase "the thematic and sectoral coverage of their activities, in particular addressing issues of entrepreneurship and sustainability, going beyond the focus on commercialization of technology" (Tiago Domingos, Terraprima CEO).

Time and financial constraints are also pointed as two important factors to prevent a further involvement of ASOs in UTEN's activities. According to Sílvio Macedo, CEO of Xarevision, although the company is very interested in participating in some programs, most notably, US Connect, "too much time spent away from the company" does not permit to materialize that willingness. Several CEOs further underline the desirability of increased funding to facilitate more physical interactions between entrepreneurs and foreign (namely American) customers.

## References

[1] O'Shea, R. P.; Chugh, H.; Allen, T. J. (2008) Determinants and consequences of university spin-off activity: a conceptual framework; *Journal of Technology Transfer*, 33 (6), pp. 653-666.

[2] Ndonzuau, F.N., Pirnay, F., Surlemont, B. (2002) A stage model of academic spin-off creation; *Technovation*, 22 (5), pp. 281-289.

[3] Samson, K. J.; Gurdon, M. A. (1993) University scientists as entrepreneurs: A special case of technology transfer and high-tech venturing; *Technovation*, 13 (2), pp. 63-71.

[4] Steffens, M., Rogers, E. M.; Speakman, K. (1999) Spin-offs from research centers at a research university; *Journal of Business Venturing*, 15 (1), pp. 93-111.

[5] Morales-Gualdrón, S. T., Gutiérrez-Gracia, A., Dobón, S.R. (2009) The entrepreneurial motivation in academia: A multidimensional construct; *International Entrepreneurship and Management Journal*, 5 (3), pp. 301-317.

[6] Ratinho, T., Henriques, E. (2010) The role of science parks and business incubators in converging countries: Evidence from Portugal; *Technovation*, 30 (4), pp. 278-290.

[7] Jones Evans, D.; Klostén, M.; Andersson, E.; Pandya, D. (1999) Creating a Bridge between University and Industry in Small European Countries: The role of the industrial Liaison Office; *R&D Management*, 29 (1), pp. 47-56.

[8] Teixeira, A.A.C. and Lopes, M., Open Innovation in Portugal, *Acta Oeconomica*, 62 (4), pp. 435-458

[9] Teixeira, A. C.; Costa, J. (2006) What Type of Firm Forges Closer Innovation Linkages with Portuguese Universities?; *Notas Económicas*, 24, pp. 22-47.

[10] Nosella, A., Grimaldi, R. (2009) University-level mechanisms supporting the creation of new companies: An analysis of Italian academic spin-offs; *Technology Analysis and Strategic Management*, 21 (6), pp. 679-698.

[11] Colombo, M. G.; Grilli, L. (2010) On growth drivers of high-tech start-ups: Exploring the role of founders' human capital and venture capital; *Journal of Business Venturing*, 25 (6), pp. 610-626.

[12] Dahl, M.S.; Sorenson, O. (2012) Home sweet home: Entrepreneurs' location choices and the performance of their ventures; *Management Science*, 58 (6), pp. 1059-1071.

[13] Gimmon, E.; Levie, J. (2010) Founder's human capital, external investment, and the survival of new high-technology ventures; *Research Policy*, 39 (9), pp. 1214-1226.

[14] Ganotakis, P. (2012) Founders' human capital and the performance of UK new technology based firms; *Small Business Economics*, 39 (2), pp. 495-515.

[15] Lee, C.; Lee, K.; Pennings, J. M. (2001) Internal capabilities, external networks, and performance: a study on technology-based ventures; *Strategic Management Journal*, 22 (6-7), pp. 615-640.

[16] Zheng, Y.; Liu, J.; George, G. (2010) The dynamic impact of innovative capability and inter-firm network on firm valuation: A longitudinal study of biotechnology start-ups; *Journal of Business Venturing*, 25 (6), pp. 593-609.

[17] Taheri, M.; Van Geenhuizen, M. (2011) How human capital and social networks may influence the patterns of international learning among academic spin-off firms; *Papers in Regional Science*, 90 (2), pp. 287-311.

[18] Pirolo, L.; Presutti, M. (2010) The impact of social capital on the start-ups' performance growth; *Journal of Small Business Management*, 48 (2), pp. 197-227.

[19] Li, H.; Atuahene-Gima, K. (2001) Product innovation strategy and performance of new technology ventures in China; *Academy of Management Journal*, 44 (6), pp. 1123-1134.

[20] Almeida, A.; Teixeira, A.A.C.; Santos, C. (2010) Strong Patenting, Weak R&D, VDM Verlag, ISBN 978-3-639-22954-7

[21] Oliveira, P.; Teixeira, A.A.C. (2011). The internationalization profiles of Portuguese SMEs, FEP Working Papers 439, Universidade do Porto, Faculdade de Economia do Porto.

[22] Teixeira, A.A.C.; Grande, M. (2012), Determinants of the performance of Portuguese Academic Spin-offs: an empirical investigation, in <http://utenportugal.org/assessment/>.



**Table 3.3 (Appendix) Top performers ASOs by sector of activity**

ASO	Sector	UTEN Partner	Brief description
Bioalvo	Bio/Pharma	FCT-UNL	Bioalvo designs and develops applications derived from its technology platform, GPS D2 (Global Platform Screening for Drug Discovery), aimed at the discovery of new drugs.
Inovapotek		UPIN	Inovapotek performs consulting and R&D services for pharmaceutical and cosmetic industries.
Bilobite Engenharia	Energy / Environment / Sustainability	UPTEC	BLB ENGENHARIA promotes energy efficiency, supplying the best available solutions concerning energy usage, production and management, striving to meet and overcome the client's best expectations by taking the path of innovation and excellence.
Oceanscan		UPTEC	OceanScan has an innovative approach to develop tools, vehicles, systems and technologies for the cost-effective access to the ocean.
Qualitas Instruments		FCT-UNL/ Madan Parque	Qualitas Instruments is an engineering and consulting company with activity associated with the environment in general and to the water sector in particular.
Smartwatt		INESC Porto	Smartwatt is a technological company that operates as an energy services company (ESCO), providing solutions in the area of renewable energy and energy efficiency, strategic advice, and in the areas of sustainability and carbon management.
Sparos		CRIA	Sparos is devoted to innovate in the development of new products and processes for fish feeding and nutrition.
Terraprima		TT@IST	Terraprima engages in the inventory and quantification of (in)direct environmental impacts of human activities and the assemblage of integrated systems to compensate them.
Cleverti		Madan Parque	Cleverti's offer includes a broad set of IT services, divided into IT Development and Life Cycle Management. These services were designed to assist companies throughout the lifetime of their software solutions, by improving and extending their internal capacity for developing, testing, maintaining and supporting such solutions.
Keep Solutions	ICT / Software/ Digital Media	TecMinho	Keep Solutions is dedicated to developing advanced solutions for information management and digital preservation.
MOG Solutions		INESC Porto	MOG Solutions is a recognized leader in the development of MXF Technology.
Sqimi		FCT-UNL/ Madan Parque	Sqimi solves Computer Science Complex Challenges, and its challenges at making computers and computation useful for business, usable and accessible to people.
Ubisign		TecMinho	Ubisign focus on the development of state-of-the-art solutions for professional digital signage projects.
Advanced Cyclone Systems	Microelectronics & Robotics	FEUP	Advanced Cyclone Systems, S.A. (ACS) is a company exclusively dedicated to the development, and international commercialization of high efficiency cyclone systems.
Science4you		INDEG	Science4you, S.A. is currently engaged in two distinct business areas: science toys and activities.
Xarevision		INESC Porto	Xarevision is a Digital Signage and Corporate TV company, which owns and exploits the largest digital in-store advertising network in Portugal.

### 3.3 TTO Results: Client Feedback

The following testimonials are the combined feedback from companies across Portugal who have benefitted from the skills and professionalism of the UTEN TTO network. This feedback represents the success of the UTEN network in a way that no other metric can capture, because it represents the intended “end result” of UTEN efforts: the formation and strengthening of companies through increased exploitation of intellectual property.

#### NOVA University of Lisbon

##### NOVA University Entrepreneurship Office

- **Project: Eye Track**, a new system to diagnose degenerative disease

*NOVA Entrepreneurship Office is possibly one of the NOVA structures with biggest potential impact in the life of the students. The fact that it's led by a proactive person with the capacity of communicate with the students allied with a big professionalism and practical knowledge without compare in Portuguese University, makes this NOVA Entrepreneurship Office one of the areas where the University must Invest. (Bárbara Oliveira)*

#### NOVA University of Lisbon

##### NOVA University Entrepreneurship Office

- **Project: UNDA Renewables**, technology to harness wave energy into electricity

*UNDA Renewables arises from the development of a new technology to harness wave energy into electricity. Its founders, students from Nova University of Lisbon, soon realized that they would required the help of specialized people to generate a business model and monetize this invention. This is where Nova Entrepreneurship bureau comes into play, we have now been working together for almost an year with fruitful achievements, together we built the first business model concept, for this technology, and established an important network with specialized industry experts. (Luís Mendes)*

#### NOVA University of Lisbon

##### Technology Transfer Office of FCT/UNL

- **Spin-off: MediaOmics, Lda.**, A functional enviromics method for cell culture media engineering, International Patent Pending

*MediaOmics,Lda is a start-up from the Faculty of Sciences and Technology of the Universidade NOVA de Lisboa, dedicated to the development, production and commercialization of cell culture media for life sciences. The company is leveraged on a technological platform that was originally developed in the systems biology and engineering research group within the Faculty campus. The path taken by MediaOmics founders, from the identification of the market opportunity to the development of the first business plan and beyond, has counted with an extremely valuable contribution of the Technology Transfer Office (TTO) of the Faculty. In the very beginning the TTO helped the researchers in the identification of the*

*best strategy for intellectual property protection. The TTO interfaced very efficiently the researchers, the Faculty direction and the patent Attorneys. The TTO was extremely important to help the researchers to understand all the steps involved and the importance of filling a good patent. Later on the TTO interfaced the Faculty Direction and the company promoters in the technology licensing contract. Since then, MediaOmics has participated in several entrepreneurial programs (CoHitec by COTEC in 2010, Act2Enhance by COTEC in 2011) and venture competitions. MediaOmics won the 100k MIT|Portugal venture completion, track life-sciences, in 2011. MediaOmics has finally finalized the development of the first commercial product and is not striving to enter in the market. The TTO was physically and emotionally involved in all important moments of the company. It is very incentivizing for the promoters to feel the support of the Faculty at early stages. The TTO continues to constantly challenge the promoters with new market and funding opportunities. I do sincerely believe that without the existence of the TTO, the creation of start-ups like MediaOmics can be severely discouraged due to a number of procedures and legal activities that need to be undertaken, which the researchers are not experienced to handle with. (Rui Oliveira, CEO, MediaOmics, Lda.)*

#### Polytechnic Institute of Porto

##### Knowledge & Technology Transfer Office (OTIC-IPP)

- **Spin-off: Fisio Trim Trim**

*Fisio Trim Trim presents itself as a family of health professional involved in the field of pediatrics with the purpose of providing to little ones any services needed for their well-being and healthy development. The main focus areas are: Physical Therapy, Speech Therapy, Occupational Therapy, Pediatric Nutrition and Babysitting.*

*Fisio Trim Trim is today a growing business but its embryonic project began at the 6th Edition of Poliempreende, developed by OTIC-IPP. During this time we began to understand what was necessary for the creation and development of a project through lectures and practical application of the concepts in developing cases. This theoretical framework included components of management, financial and marketing that were fundamental. It allowed us to decide which strategies would be more suitable to our company. When the time came to finally get the idea running we could continue to rely on the experienced advice and constant support of the OTIC team, especially Dr. Rafael Pedrosa who accompanies us since the first steps. They have always been relentless in trying to give answers to the problems presented by us and near to watch the development of our project. For that we thank you! (Ana Ferreira, Partner, Fisio Trim Trim)*

#### Polytechnic Institute of Porto

##### Knowledge & Technology Transfer Office (OTIC-IPP)

- **Spin-off: Gallery Hostel**

*The Gallery Hostel is a hostel, located in the historical city of Porto, oriented to backpackers, offering a range of products and services capable of meeting the needs of this target segment, with leisure activities, sports, entertainment and fun, all aimed at*



fostering coexistence between guests Due to the OTIC, I could reach my dream and opened last year the business that they help me to developed.

I would like first at all address to Dr. Rafael Pedrosa my sincere gratitude for all support and for believing in my idea, capabilities and competencies. After winning the Poliemprende project, it became easier for me to be eligible for participating in different programs, like; Erasmus for young entrepreneurs and the Leonardo Da Vinci program, but also it gave me the right tools and confidence to open a successful Hostel.

Dr. Rafael Pedrosa is a very skillful person in the entrepreneurship field and has a special gift for dealing and helping people; he was always reliable and gave me precious advice's about the business plan. His support was a tremendous help for achieving all my goals. OTIC has the right attitude and is dedicated in helping young entrepreneurs achieving their dreams. (Luís Ribeiro, Manager, Gallery Hostel)

### Portuguese Catholic University Spinlogic

- **Project: Nutrally**, formulation, trade secret

"Nutrally was born from a simple idea: provide candy with a greater nutritional value, particularly jelly sweets (gummy bears). The project is being developed since October of 2011, and is incubated in the Católica Porto Incubator, Spinlogic, relying on the College of Biotechnology (Portuguese Catholic University) for scientific support. Our core activity is the formulation of jelly gummies (functional or nutraceutical), in parallel with the development of the "Nutrally" brand and the concept of healthy food.



The media coverage has boosted the model and the business strategy, by giving direct feedback from the market and overall consumers. The projection for future growth undergoes the commercialization and distribution of products with its own brand and medium-to-long term development of products adapted to high value market niches. (Filipa Rocha and Silvino Henriques, Partners, Nutrally)

### Portuguese Catholic University Spinlogic

- **Project: Movelife**, nutritional knowledge involving IT and mobile technology, trade secret

The growth of health problems and unbalanced diets has created serious problems world-wide. On the other hand, a proliferation

of new life styles and diet habits is occurring, since consumers are becoming more informed and more demanding. Movelife is based on Nutrition science allied with Communication Design, IT and Management, creating communicational solutions for food decoding, providing that knowledge to the consumers and the restaurant industry.



Because we are presently in incubation at Católica Porto Incubator, Spinlogic, we have the possibility to join the two areas, with the support from the College of Biotechnology and the School of Arts (Portuguese Catholic University). The learning process, the sharing of experiences, the network and the monitoring process carried out by specialized mentors is essential for the development of our business. (Cláudia Torres and Ricardo Baptista - Partners, Movelife)

### Technical University of Lisbon Inovisa

- **Spin-off: Prosense Lda**, Sensory Analysis & Consumer Science Services

PROSENSE is a spin-off created in 2009. Our main activities focus on sensory analysis and consumer sciences services. INOVISA support, works at different levels. With regards to PROSENSE, it allowed us to create our first virtual office, during the first months of our activity. At the moment our offices are located there, and we benefit of competitive rents which allow us to be close to our business partners at convenient prices.



INOVISA also promotes cooperation between other spin-offs from its business park. Together with INOVISA, PROSENSE developed a couple of seminars and courses in sensory analysis. PROSENSE gained visibility and got to know some potential customers. (Ana Gonçalves, Managing Partner)

### Technical University of Lisbon OTIC | UTL

- **Project: in development**, natural cleaning system for water

Regardless of theories and ideologies, all economists agree that if someone wants to be better in the future, our capital needs

to be expanded through investments. I'm designing a business plan with the support of OTIC|UTL, based on a national study area of about 900 Km<sup>2</sup> and international of about 5000 Km<sup>2</sup> and a new technology is being tuned for a 5 hectare area.

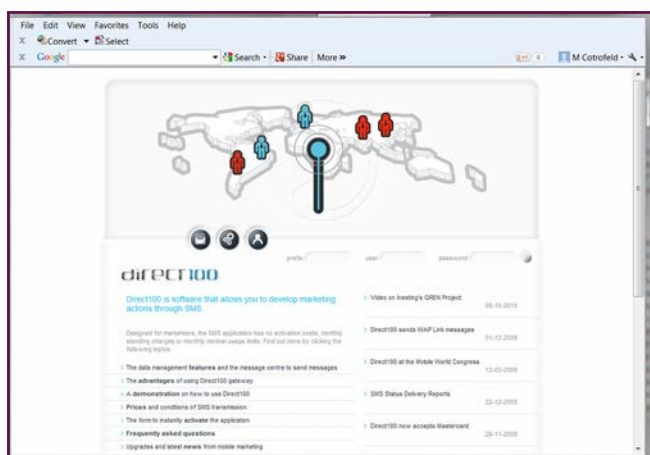


My collaboration with OTIC|UTL is interesting because economists focus predominantly on capital manufacturer and ecologists (like me) focus on what is widely known as nature or natural capital. Due to decades of excessive loss of Biodiversity my plan is aimed to create a company that will accentuate the natural capital and the true development of rural areas and extractive industries. (Maria da Conceição Matos)

### University of Algarve CRIA, Division of Entrepreneurship & Technology Transfer

#### ● Project: Direct 100® by Inesting

Inesting relationship with the academy (faculty and applied research done by the University of Algarve) has improved significantly since CRIA started. Besides several collaborations in knowledge dissemination events, such as seminars and workshops, Inesting has improved its efficiency in attracting talent from the university and was able to match its market goals with technologies developed by the university much more easily. A ongoing co-promotion project (University-Industry) with a budget of approximately 800.000€ reflects this new reality.



Through CRIA (Division of Entrepreneurship and Technology Transfer, University of Algarve) we've learnt about US Connect Program (UTEN). Using a personal and direct communication they were able to motivate us to engage in the Program. When writing the application their support and efforts to clarify our questions was critical for Inesting successful selection to participate in the Program. They've also played an important role after the application submission ensuring an effective connection with US Connect staff.



This collaboration allowed us to assess U.S. Market sensibility to our product Direct 100 currently in internationalization phase. This experience enabled us to collect important feedback. We've learnt valuable lessons regarding product development and ulterior product launch in the U.S. Market. (Francesco Berrettini – CEO, Inesting, S.A.)

### University of Algarve CRIA, Division of Entrepreneurship & Technology Transfer

#### ● Spin-off: Caviar Portugal | Acipenser,

Lda, Sturgeon fish farm (RAS) in the South of Portugal

Caviar Portugal (Acipenser, Lda) is a spin-off from the University of Algarve founded in 2012, focused in sturgeon aquaculture for the production of caviar. It was originated from the thought of two entrepreneurs at the end of 2010 and had since the first moment the support of CRIA, in the University of Algarve.

CRIA officers aided us, during the last two years in the maturation of this project, addressing many different areas, from technical to logistical: facilitating an incubation place, training in business areas, fomenting the contact with investors and financial authorities, the development of a robust business plan among many other activities.

Most of all I value and appreciate all the feedback and discussions we had with the TTO's from CRIA, and the unconditional moral support and extra supply of motivation, that made us move forward even with some adversities we found in our track in the last two years. I truly believe that without that honest thinking, sometimes "out of the box," we couldn't mature our ideas into a business.

In the two years I also record and evidence the effort done in training for business and the participation in some seminars organized by UTEN Portugal. The approach to the global market is vital for our company and all the contacts and consulting time we were able to have in different subjects (e.g. internationalization, intellectual property) with experts on this fields made us aware of a new world. I think we will collect the fruits of all this advice in the following years. (Paulo Zaragoza Pedro, CEO Caviar Portugal-Acipenser Lda)



**University of Aveiro**  
**UATEC - University of Aveiro Technology Transfer Unit**

- **Spin-off with License: Veniam**, communications software and hardware developed at the University of Aveiro and University of Oporto

*Veniam turns your car into a hotspot, puts your car data into the cloud, and builds a network between vehicles that can be leveraged for business, safety, and entertainment purposes. Veniam is building communications software and hardware – the vehicular WiFi (ViFi) box – that can be installed in every existing vehicle, offers WiFi off-loading capabilities, provides seamless low-cost connectivity (an enormous benefit in and of itself), and will catalyze the birth of a new market for car apps, which will leverage the unique properties of a Veniam-enabled vehicle-to-vehicle (v2v) mesh network. As active nodes in the wireless backhaul supporting mobile Internet access, vehicles connected through Veniam's products can leverage the unique capabilities of our car-to-car networking technologies to bring a 10x improvement to the reach and a 100x improvement of the urban area coverage of conventional WiFi hotspots.*

*Veniam is a startup from both the University of Aveiro and University of Porto, a very recent company that started in March 2012. Up to now it has received all the support from UATEC in its creation and in providing all the steps for reaching a good agreement between Veniam and both Universities. In our first meeting with UATEC, we were able to get a great feedback with respect to the novelty and value of the company, and we were able to quickly evolve to the IP agreements that need to be undertaken between both Universities and the company. We can highlight the openness to the interaction between both UATEC and UPIN to negotiate the IP agreements between both Universities, the fast responsiveness and professional attitude to efficiently address all the aspects related to the startup of Veniam. (Susana Sargento, CEO, Veniam)*

**University of Aveiro**  
**UATEC - University of Aveiro Technology Transfer Unit**

- **License: LT-electronic**, device for temperature control of implants and bone cements in cemented arthroplasty procedures, Portuguese Patent granted

*In general terms the support provided by the TTO was quite positive. Indeed, we were contacted by the TTO which presented us several technologies developed at the University of Aveiro. This is a very proactive approach that had as an outcome this successful relation between the University and LT Electronic. On the other hand, UATEC has been providing a valuable help in terms of fund raising to support further development of the technology - we have an ongoing joint project supported by QREN. Besides the professionalism of the UATEC staff that has been managing this collaboration, the University has also provided a strong and efficient technical support, with regards further development and proof of concept demonstration. (Pedro Leite, CEO, LT Electronic)*

**University of Aveiro**  
**UATEC - University of Aveiro Technology Transfer Unit**

- **Spin-off: BMD Software**, software applications developed at the University of Aveiro in health and life science industries.

*UATEC has been playing a key role in the promotion of entrepreneurship in the academic community, where this has been seen as a less noble activity. Through the regular dissemination of outcomes and skills,*



*UATEC helps closing the gap between academia and industry and motivates the rising of new projects and startups. BMD Software is one of such startups that benefits greatly from this continuous support. (Luís Oliveira, CEO, BMD software)*

**University of Beira Interior**  
**ICI - Research Coordinator Institute**  
**GAPPI - Office for the Promotion of Research & Projects**

- **Spin-off: Labfit, Health Products Research and Development, Lda.**, Health Products Research & Development Laboratory, with major focus on manipulated drugs research and production, two patents in application process,

*GAPPI, office from University of Beira Interior, represented by Dr. Dina Pereira is the major example of professionalism and dedication expected from a team, as this one, with a such relevant role in the technological development of Covilhã. Since the first moment, when the business idea of our spin-off was concept, that was supported by WinUBI2011 challenge where we were distinguished with two awards, GAPPI was been crucial for the concretization of the project. GAPPY has supported the patents registration and transfer for the spin-off.*



*Without this important team we think that it would be very difficult to overcome all the little obstacles that always appear for someone that want to start something. We are very grateful to GAPPI, specially to Dr. Dina Pereira. (Ana Palmeira, CEO, Labfit)*

**University of Beira Interior**  
**ICI - Research Coordinator Institute**  
**GAPPI - Office for the Promotion of Research & Projects**

- **Spin-off: Waydip**, Technology: Waynergy, Two Portuguese Patent Requests, Two PCT Patent Requests.

*The GAPPI (UBI TTO) provided a support with very high quality to Waydip since the phase when the promoters started*

the project, both in terms of protection of industrial proprietary from the technology under development (Waynergy), as well as support on the applications to innovation awards, in preparing the business plan, which led to the creation of Waydip. After the company created, the connection and support provided remained, having been supported the registration of two national and international patents (PCT), as well as trade mark protection (Waynergy), both national and at European level. The support was always supplied with maximum professionalism and commitment by the ICI, having a major role in the origin of the company.



I would like to thank to GAPPI (UBI) from all the support they always provided us, both on the intellectual property protection as well as on the business plan development, which was really important on the development of Waynergy project and on the Waydip creation. It was essential on the startup creation process, definitely! (Francisco Duarte, CEO, Waydip)

#### University of Beira Interior

##### ICI - Research Coordinator Institute

##### GAPPI - Office for the Promotion of Research & Projects

- **Spin-off: IS2you**, wi-GO, Autonomous device to carry objects for Disabled People using Kinect, provisional patent

IS2you is a University of Beira Interior spin-off, created in 2012 as a result of a research & Development project from the University IT department. During research developments ICI provided all the support regarding intellectual property issues. The provisional patent was applied with success.

As main responsible for the spin-off project development and related research I confirm that the support settle by ICI was of great relevance not only regarding IP submission but also regarding spin-off creation. Nowadays, we work closely to ICI and we know they are available for further support. (Luís de Matos, CEO, IS2you)

#### University of Coimbra

##### DITS - University of Coimbra Technology Transfer Unit

- **Spin-off with License: Toxfinder Lda.**, an in vitro approach for skin sensitization hazard. PCT extension

Toxfinder Lda was founded in August of 2011. The idea arose during the development of the experimental work leading to

the doctoral dissertation of one of the managing directors of Toxfinder Lda, Bruno Neves. His dissertation aimed in answering to a specific necessity of the European Cosmetic and Toiletry industry that is required by the Organisation for Economic Cooperation and Development (OECD/OCDE) to perform skin sensitization tests for each product without using animals. Having this in mind, our research at the Faculty of Pharmacy of the University of Coimbra and at the Centre for Neuroscience and Cell Biology (CNC), led us to a fully developed in-vitro skin sensitization test that meets exactly the same legal requirements of product safety, as a non-animal testing substitute. All the experimental work was funded by the Cosmetic Industry and by the Foundation for Science and Technology (FCT). In a next step, and under the supervision of DITS (Divisão de Inovação e Transferências do Saber) we performed the intellectual protection of the test through an international patent that is currently under evaluation. DITS strongly encouraged us to open a spin-off in order to commercialize the developed test, which was the start point for Toxfinder foundation. Currently, Toxfinder is localized in Instituto Pedro Nunes that provides optimal conditions for the implementation and development of this company through technical guidance in the seed stage and start-up company, as well as offering consultants specialized in different areas. (Teresa Rosete, CEO, Toxfinder Lda.)

#### University of Coimbra

##### DITS - University of Coimbra Technology Transfer Unit

- **Spin-off with License: LaserLeap**, a device for efficient delivery of compounds to or through the skin or biological barriers using light absorbing thin films, PCT extension

We received full support from all the University of Coimbra structure. This was one of the biggest positive surprises we had when we founded our company. The University of Coimbra has more than 700 years. One would think that the classic University would not be prepared for new challenges. But exactly the opposite happened. The whole structures of the University, from the staff to the Rector have appreciated our idea and in a very professional way have given us their full support. Among those structures I emphasize the action of DITS.

In fact, DITS and the University were decisive for the birth and development of the company. First, the quality of research laboratories, as LaserLab Coimbra has a research infrastructure comparable to the best in the world. Second, DITS, the Innovation and knowledge transfer unit at the University of Coimbra was able to find funding opportunities and defend the project with financing institutions. That provided the necessary means to do the technology proof of concept. The very professional administrative staff and the open minded attitude of DITS made easy the patenting and licensing process. Currently, the business incubator affiliated with the University (Instituto Pedro Nunes) is also accompanying our development. (Paulo Novais/Lusa, Carlos Serpa, CEO, LaserLeap)



**University of Évora**  
**Projects and Information Office**  
**Science and Cooperation Services**

- **Spin-off with License: Chiratecnics Lda,**  
 Industrial Chemical & Catalytic Processes, Trade Secret

*The Office for Science and Cooperation Services at the University of Évora, including various Vice-rectors with overall responsibility for this office, and GAPI-UE have always had a proactive role in assisting us with the commercial development of a key chemical process invented by one of its researchers and which has considerable potential for the pharmaceutical industry. From developing the proof-of-concept, through to spin-out creation and finally to tech transfer, these offices has always been very supportive, positively engaged, and completely “on-board” with us in this initiative.*



*After very constructive negotiations with the University of Évora, a very effective tech transfer agreement was hammered out for the transfer of this key chemical technology to its spin-out: Chiratecnics. Chiratecnics is currently endeavoring to commercialize this technology, which has much potential for the pharmaceutical and fine chemical industries. Key personnel from the office for Science and Cooperation Services and the GAPI office have worked and engaged with us in a highly professional, competent and efficient manner, ensuring the complete success of the tech transfer to Chiratecnics, culminating in a “win-win” situation for both Chiratecnics and the University of Évora.” (Anthony Burke, CEO, Chiratecnics)*

**University of Évora**  
**Projects and Information Office**  
**Science and Cooperation Services**

- **Project: Nemaquest,** morphological and molecular detection of plant parasitic nematodes

*Every year, the Laboratory of Nematology (located at University of Évora) receives several samples from different public or private institutions/companies, with the purpose of identification and quantification of plant parasitic nematodes. This demand triggered the need to create a specialized laboratory in, both, morphological and molecular detection of plant parasitic nematodes, which represent huge annual losses of thousands of euro, worldwide. Following the participation in the competition “Atrevo-me’ 11” funded by GAPI 2.0, the creation of Nemaquest has received support from the Projects and Information Division (DPI) of the University of Évora, in particular in*

*the preparation of the study of viability of Nemaquest. On the behalf of the Nemaquest team, we consider that the DPI (U. Évora) has played a notable role helping on the development of the project Nemaquest. Moreover, in September 2011, we were invited to participate in the Networking Session during the Final Ceremony of ISCTE-IUL MIT | Portugal Venture*



*Competition, which took place on the Grande Auditório do ISCTE-IUL, Lisboa, where we were able to present Nemaquest. (Nemaquest Team, coordinated by Manuel Mota)*

**University of Lisbon**  
**UL INOVAR**

- **Spin-off with License: Technophage, SA,**  
 TA\_101, an inhibitor of TNF for the Treatment of Rheumatoid Arthritis, PCT filed

*The interaction with UL inovar has been very fruitful in recent years. Not only has the TTO negotiated and set up agreements between TechnoPhage and the University of Lisbon, but it also promoted the US Connect program. TechnoPhage has moved onto the second round of technology promotion within the US Connect program. This has had the relevant participation of Dr. Greg Pogue from Austin, Texas. Overall, these efforts lead to significant contacts within the pharmaceutical industry in the United States that may lead to important partnerships regarding TA\_101 product in the future. (Miguel Garcia – CEO, TechnoPhage SA)*

**University of Madeira**  
**OTIC-TECMU | CEIM BIC Madeira**

- **Spin-off: Awaiba, Lda.**

*Awaiba is a privately owned company that provides custom design solutions for machine vision automotive and medical applications. We pride ourselves in our continued innovation since 2004 and excellence in Custom design and standard sensor components for Medical imaging and Machine Vision. AWAIBA’s main expertise in medical imaging is focused towards scanning imaging applications, such as digital scanning microscopy and medical endoscopy. Some of our milestones are:*

- » 2006: World’s smallest digital Image Sensor 0.5 x 0.65 mm
- » 2008: World’s first TSV wafer level camera
- » 2008: Dragster linescan sensors: world’s first 16k digital linescan sensor
- » 2010: World’s highest data rate digital high speed sensor, 4Mpix 500Fps, 10bit

*Despite its very specific needs in specialized human resources and technology, Awaiba has developed strategies for promoting technological and scientific innovation with local organizations since its foundation. Awaiba has an ongoing development project with UMa and INOV with very ambitious goals in terms of technology and innovation. Fraunhofer Institute has also been a valued partner in the development of certain technologies. Awaiba employs several UMa graduates and help them develop their potential to a very high standard with a highly specialized training.”*



*Awaiba, Lda headquarters are located in Funchal, Madeira. In the first years of activity in Portugal the company was established in CEIM/BIC Madeira’s incubator (October 2004 to February 2009). The permanency in the incubation space allowed the access to a full range of support (furnished and equipped installations, administrative help and technical support/consultancy), assistance in all phases of company development as well as a continuous follow-up during the first years of the activity, very important for the consolidation of the company activity. (Martin Waeny, CEO, Awaiba, Lda.)*

#### University of Minho TecMinho

- **Spin-off: Earboxwear S.A.**

*Our start point was TecMinho’s initiative, Idealab. Before that, our business vision was very low. This experience allowed us to organize our idea and develop a business plan which turned out to become our visit card. We started to present it to business angels, they evaluated and in the end they accepted our proposal.*

*Today Earboxwear have 4 people working at full-time and every day we have sales on-line. (João Oliveira, Cofounder, Earboxwear S.A.)*

#### University of Minho TecMinho

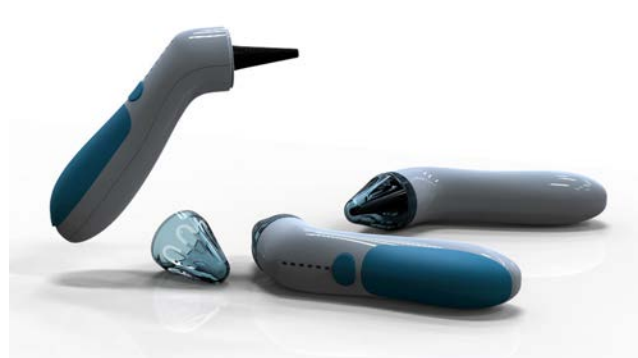
- **Project: EdibleMatrix**

EdibleMatrix aims the development of edible-based products for food applications, and have as mission the development of technology-based products using edible and biodegradable materials in order to improve the quality and safety of food products. Despite the wide technological knowledge of the promoters, the participation on the VII Idealab and TecMinho support were fundamental for the development of the Project. This allowed acquiring knowledge that is crucial for the development of a business plan. As a result, the promoters are nearer to create a company. (Miguel Cerqueira)

#### University of Porto UPIN – University of Porto Innovation

- **Spin-off with License: Metablue Solutions, Digital Otoscope, Digital Otoscope, Digital Otoscope**

*Metablue had its genesis at the University of Porto (UP) and showed early interest in evaluating various technologies owned by UP. The relationship kept with UPIN in this process turned out to be successful Because since the very beginning UPIN had the perfect idea of the difficulties that a technological start-up has to face. UPIN showed a great ability to adapt their positions, helping Metablue to overcome some obstacles in its start-up phase as business project. Metablue and UPIN were able to establish a productive partnership That led to the negotiations for the licensing of the Digital Otoscope’s technology.*



*More, Metablue and UPIN started recently the negotiation of the commercial exploration of a second technology. As Metablue’s CEO, I commend the stance of UPIN and its commitment to contribute to the success of my business project. (Diamantino Lopes, CEO, Metablue Solutions)*

#### University of Porto UPIN – University of Porto Innovation

- **Spin-off with License: Streambolico, Lda, Feedback based erasure recovery for real-time multicast over wireless networks, PCT Filed**

*UPIN was extremely important on the efficient protection of an important Intellectual property developed at University of Porto. During the licensing negotiation process of this IP, and while strongly defending the UP interests, UPIN have also demonstrated attention and sensitivity to the interests and constraints of a young start-up such as Streambolico.*



*In my opinion, the dedication, passion, knowledge in the matter and professionalism of UPIN staff and officials is what allows UPIN to overcome strong financial and legal constraints of such public entity, and to deliver a high quality of service on the promotion and valuation UP Intellectual property. (João Barros, CEO, Streambolico)*



University of Porto  
UPIN – University of Porto Innovation

- **Spin-off with License: Tomorrow Options**, WalkinSense, European, USA and PT patent (pending)

*UPIN was involved from the beginning in the negotiation of the license agreement that gave origin to the Walkinsense product (a device to monitor lower human limb movement, with a wide range of applications: orthopaedics, neurology, cardiology and podiatry).*



*UPIN was supportive and committed in establishing a common ground between all parties involved in the negotiation; we all learnt a lot from this first interaction and we are glad to say that a fruitful collaboration with UPIN emerged. They keep us informed of other opportunities that might be of interest for the company, such as funding, international collaborations or technologies that fit to our business model. We have no doubts that entities like UPIN help strengthen the links between university and industry; it is with great pleasure that we see them become more and more proficient in these matters. (Paulo Santos, CEO, Tomorrow Options)*

University of Trás-os-Montes e Alto Douro (UTAD)  
GAPI-OTIC - Technology Transfer Office

- **License: Douromel**, Candied fruit without sucrose, PCT filed

*The Douromel began working with the GAPI-OTIC the University of Trás-os-Montes and Alto Douro in 2009 upon submission of a jointly project. The project was successful, resulting in technology that we licensed in 2012. The excellent work done by the team of TTO UTAD as well as their commitment, professionalism and competence were critical in this process. (Pilar dos Santos, CEO, Douromel)*

### 3.4 Feedback from UTEN International Workshops

#### Objectives

UTEN international workshops and training weeks have enhanced Portuguese TTO manager and staff capabilities for technology transfer and commercialization. Participants were able to:

- Deepen their understanding of science and technology transfer and commercialization through actual case studies that built on the experience of leading institutions worldwide;
- Foster working relationships and facilitate sharing of tools, perspectives, and examination of key challenges and issues facing Portuguese stakeholders;
- Contribute to a sustainable, critical mass of professional technology transfer talent to accelerate globally competitive technology commercialization; and
- Understand and access other UTEN activities ranging from internships to on-the-job training.

Organized with the FCT, the workshops and training weeks utilized international experts from public and private organizations as well as select representatives from Portugal's international partners including The University of Texas at Austin, Carnegie Mellon University, the University of Cambridge, and other world-class collaborators. Attendance for these workshops and training weeks is shown in table 1.

Other UTEN training and networking events have included the UTEN Annual Conferences, six entrepreneurship days for university students (total of 240 attendees), three roundtables for senior technology transfer officials, in addition to several one-day events early in the program, and presentations at Innovation Days workshops, which had 196 attendees in 2009.

#### Assessments

To aid in planning future Training Weeks and International Workshops and to provide policymakers with objective data, online surveys were conducted immediately following each event. Evaluative information was obtained from approximately 80% of the 575+ participants. Both quantitative and qualitative information (verbatim comments from participants) was compiled, and a short report was prepared after each event.

Evaluative data from participants indicates the workshops and training events were well designed and implemented. Feedback has been overwhelmingly positive for all events conducted to date. As a summary:

- On average, approximately 68% of participants have rated daily sessions "Extremely Useful" or "Very Useful", with an additional 23% rating them "Useful." Fewer than 10% said the sessions were "Somewhat Useful" or "Not At All Useful."
- One-third (33%) of participants indicated that the events, on average, had "Far Exceeded" or

“Exceeded” their expectations while 56% said their expectations had been “Met.”

- Approximately 90% of the participants responded that the workshops and training weeks on average had “provided information new to me;”
- Nearly 9 out of 10 participants (89%) said the events provided “information they can use in their jobs,” whereas 86% said the events “will help me strengthen my technology transfer capabilities;” and
- Eight-one percent of all participants said they would recommend the training to a colleague, and 63% of the participants said they would like more advanced training on the topics. Nearly all of the remaining participants said that they “might” want more advanced training.

As the above summary statistics are averages, some events were rated higher, and some were rated lower. This variation was due to different presenters and content, different audiences (in size and backgrounds as the workshop and training week series progressed), and the extent of targeted training compared to earlier heterogeneous topics. Rapid response to participants surveys has, in part, shaped the subtle changes in workshop and training week objectives, program formats, and evaluation instruments over the five years.

### 3.5 Media Coverage of UTEN Events

UTEN developed media advisory activity between 2009 and 2012 which was targeted to raise awareness among the Portuguese community, the professionals,

and decision-makers, in particular, as UTEN developed a competitive, sustainable, national infrastructure to commercialize technology in global markets.

A total of 97 news pieces on UTEN (in paper and online media) were published between 2009 and 2012. Two television news stories were broadcast on UTEN, on two of the main television stations in Portugal, and one news radio broadcast. The media’s news coverage of UTEN helped increase visibility (and thus participation), while also providing credence that could not have been achieved through advertising.

The strategy consisted of leveraging UTEN events to capture the media’s attention to the broader theme of technology transfer, as well as the specialized themes that were addressed as part of these particular events. Similarly, the network promoted the presence of international experts visiting Portugal, seeking relevant interviews and news reports on themes relating to UTEN’s mission.

*Print Media.* Table 3.4 presents a summary of all the news pieces, organized by Type of information, published in print between 2009 and 2012. This analysis indicates print media reached a potential audience of 1,163,692 between 2009 and 2012.

The Scheme below shows a year-by-year estimate of the number of people who were exposed to UTEN information through printed media. It is important to highlight that these numbers are mere estimates. While circulation is an indicative number for readers on a standard publication day, it is true that some subscribers do not read all news articles, while some print media is shared across an audience of multiple readers.

**Table 3.4 Analysis of UTEN Print Media ‘09 - ‘12**

Type	Source	Qty.	Circulation	Total Circulation
Business/Economy/Market	<i>Diário Económico</i>	11	20,102	221,122
Business/Economy/Market	<i>Jornal de Negócios</i>	1	18,239	18,239
Business/Economy/Market	<i>OJE</i>	2	17,700	35,400
General Information	<i>Diário de Notícias</i>	1	43,943	43,943
General Information	<i>Expresso</i> (weekly)	2	167,000	334,000
General Information	<i>i</i>	1	80,000	80,000
General Information	<i>Jornal de Notícias</i>	1	150,515	150,515
General Information	<i>Público</i>	2	46,948	93,896
General Information	<i>Sol</i> (weekly)	1	67,140	67,140
R&D/Innovation/Technology	<i>Semana Informática</i> (weekly)	2	7,451	14,902
Regional Information	<i>Diário as Beiras</i>	2	12,000	24,000
Regional Information	<i>Diário de Aveiro</i>	1	7,014	7,014
Regional Information	<i>Diário de Coimbra</i>	2	11,073	22,146
Regional Information	<i>Diário de Notícias da Madeira</i>	1	12,795	12,795
Regional Information	<i>Diário dos Açores</i>	1	3,580	3,580
Regional Information	<i>Jornal da Madeira</i>	1	15,000	15,000
Regional Information	<i>O Primeiro de Janeiro</i>	1	20,000	20,000
<b>Total</b>		<b>33</b>		<b>1,163,692</b>



	2009	2010	2011	2012
<b>Readers</b>	750,460	56,477	226,816	129,939

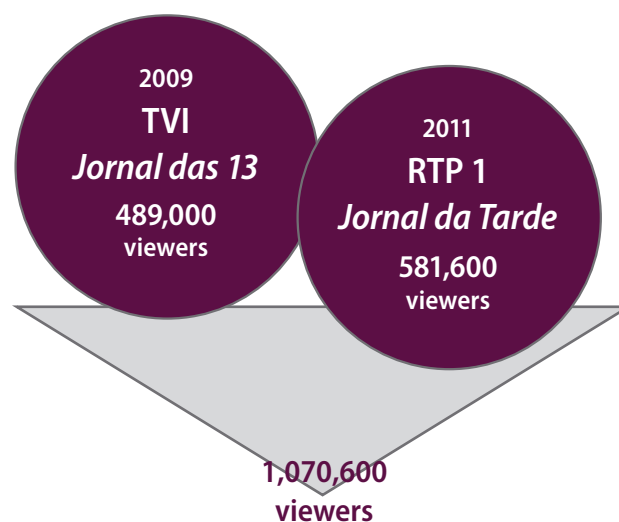
*Online Media.* It is not easy to measure the potential audience of Online media. Data regarding number of page views it is not available for the majority of Sources. Only *Ciência Hoje* (250,000 page views a month) and *Computerworld* (76,681 page views a month) have information regarding potential readers. Nevertheless, Table 3.5 provides a summary of all the news pieces, organized by Type of information, published on online media between 2009 and 2012, and the following Scheme reviews online publications year by year:

**Table 3.5 Analysis, UTEN Online Media '09 - '12**

Type	Source	Qty.
Business/Economy/Market	<i>Ambiente online</i>	1
Business/Economy/Market	<i>bizjournals.com/austin</i>	1
Business/Economy/Market	<i>New Venturist</i>	5
Business/Economy/Market	<i>Rcmpharma.com</i>	1
Business/Economy/Market	<i>superindustria.com</i>	2
General Information	<i>Diario.iol.pt</i>	2
General Information	<i>dnoticias.pt</i>	1
General Information	<i>Espbr.com</i>	1
General Information	<i>Expresso.pt</i>	1
General Information	<i>JPN</i>	2
General Information	<i>p3.publico.pt</i>	1
General Information	<i>sol.sapo.pt</i>	1
General Information	<i>Tvi24.iol.pt</i>	1
Governmental web portal	<i>i-gov.org</i>	1
Governmental web portal	<i>pcm.gov.pt</i>	1
Governmental web portal	<i>umic.pt</i>	1
Governmental web portal	<i>www.mctes.pt</i>	1
Higher education Portal	<i>AULP.pt</i>	1
Higher education Portal	<i>chronicle.com</i>	1
Higher education Portal	<i>universia.pt</i>	1
R&D/Innovation/Technology	<i>BIT.sapo.pt</i>	1
R&D/Innovation/Technology	<i>Ciência Hoje</i>	19
R&D/Innovation/Technology	<i>Ciência.pt</i>	6
R&D/Innovation/Technology	<i>Computerworld</i>	3
R&D/Innovation/Technology	<i>Fibra.pt</i>	1
R&D/Innovation/Technology	<i>Semana Informática</i>	1
R&D/Innovation/Technology	<i>Tek.sapo.pt</i>	4
R&D/Innovation/Technology	<i>Região Sul online</i>	1
Regional Information	<i>Tv ciencia</i>	1
<b>Total</b>		<b>64</b>

	2009	2010	2011	2012
<b>Articles</b>	23	14	10	17

At UTEN we have also made an effort to disseminate information through television, which is the medium of the masses in Portugal. Between 2009 and 2012, two stories on UTEN were broadcast in two of the main television channels in Portugal, the TVI and the RTP1. These news stories brought UTEN into the homes of thousands of people, as confirmed in the following figure.



### Return on Investment

It is difficult to scale the value (monetarily or otherwise) on media advisory activity in terms of notoriety and image. However, we present a frequently-used comparative analysis against UTEN results in media advisory services (in terms of text area in the case of printed press, and in terms of time in the case of the television and radio). This analysis calculates the physical size of the printed article, and the airtime minutes, against the price for comparable advertising in the media where the news pieces were published. The results provide a realistic comparison of how much the clients would have paid if they had decided to advertise, rather than work with news media.

This comparative analysis between media advisory/advertising is presented below for a selection of important news pieces on UTEN published on printed media between 2009 and 2012. From the total of 33 news pieces, we chose the 6 articles with the highest impact, taking into consideration the following criteria:

1. UTEN as main theme of news article
2. At least one page text area
  - Only news pieces with one page or more were considered in the section on investment return regarding the media advisory activity. This criterion was used because very seldom a newspaper is read sequentially and fully and, as a result, larger articles are more likely to capture the readers' attention and to be read.

**Figure 3.18 UTEN Media Equivalent Advertising Value**



### 3. Media Relevance

- Three news pieces were published in the *Diário Económico*, which is the business/economy and markets newspaper with the highest circulation in Portugal (20,000 copies per day). Furthermore, these three news pieces were published in a supplement entitled "*Universidades/Universities*," which specializes in Science & Technology, innovation, higher education and entrepreneurship.
- One news piece was published in the *Jornal de Negócios*, which is the second business/economy and markets newspaper with the highest circulation in Portugal (18,000 daily). Once again, this piece was published in a specialized supplement entitled "*Investimento, Inovação e PME*," which addresses the themes of Investment, Innovation and SMEs.
- One news piece was published in the *Público* newspaper. With a circulation that is higher than that of the other two newspapers combined (46,948 copies per day), the *Público* is a daily newspaper of reference in Portugal. A news piece published in this newspaper is, above all, a sign of credibility.
- The final result of the analysis shows that these six key pieces represented an equivalent of 74,520€ in advertising.

### 3.6 Comprehensive Media List, 2009 - 2012

#### 2009

- "MIT Portugal promove colaboração com a indústria," *Diário Económico*, 24.03.2009
- "MIT diz que portugueses são empreendedores," *Diário Económico*, 28.04.2009
- "Ciência e Tecnologia: armas eficazes no combate à crise financeira mundial?" *Ciênciahoje.pt*, 09.07.2009
- "Conferência Internacional no Porto para combater crise," *Ciênciahoje.pt*, 10.07.2009
- "Conferência," *Jornal de Notícias – JN Negócios*, 10.07.2009
- "Agenda," *SOL/Confidencial*, 10.07.2009
- "Investigadores avaliam trabalho dos gestores de transferência tecnológica," *Ciênciahoje.pt*, 13.07.2009
- "Santo Graal" para a crise: Remissão dos mercados empresariais," *Ciênciahoje.pt*, 13.07.2009
- "Navegar à bolina contra a crise com olhos postos em dois portos," *Ciênciahoje.pt*, 13.07.2009
- "Conselheiro de Obama ao Ciência Hoje 'Países têm de inovar para manter a sua posição na economia mundial'," *Ciênciahoje.pt*, 13.07.2009
- "Debate é importante para evitar crises futuras," *Ciênciahoje.pt*, 13.07.2009



- “Start-ups crescidas pedem maior compreensão,” *Ciênciahoje.pt*, 13.07.2009
- “Conferência no Porto,” *TVI – Jornal da Uma*, 13.07.2009
- “Do laboratório para o mercado: a importância das patentes,” *Ciênciahoje.pt*, 14.07.2009
- “Soluções a curto prazo,” *Ciência Hoje*, 14.07.2009
- “Invenção não é inovação,” *Ciência Hoje*, 14.07.2009
- “Esbater fronteiras entre Ciência e Tecnologia,” *Ciênciahoje.pt*, 14.07.2009
- “Criar cidades sustentáveis para promover felicidade,” *Ciênciahoje.pt*, 14.07.2009
- “Da universidade para a indústria,” *Ciênciahoje.pt*, 14.07.2009
- “Hoje,” *Diário Económico/Universidades*, 14.07.2009
- “Inovação com menos investimento e menos patentes por causa da crise mundial,” *Público*, 14.07.2009
- “Papéis da conferência ganham expressão através da música,” *Ciênciahoje.pt*, 15.07.2009
- “Conselheiro de Obama quer revolução nas universidades,” *Diário Económico/Universidades*, 21.07.2009
- “Porto atrai megafestival em 2010,” *Expresso/Economia*, 25.07.2009
- “Portugal não se pode dar ao luxo de não investir na inovação,” *Público/Caderno P2*, 27.07.2009
- “Porto candidato ao SXSW Europeu,” *Ciênciahoje.pt*, 30.07.2009
- “Especialistas de Carnegie Mellon em Coimbra,” *Diário de Coimbra*, 24.10.2009
- “IPN recebe workshop de Carnegie Mellon,” *Diário as Beiras*, 27.10.2009
- “Não há forma correcta de fazer transferência de tecnologia,” *Ciênciahoje.pt*, 02.11.2009
- “Maior incubadora de empresas da Europa traz conselhos para Portugal,” *Diário Económico*, 03.11.2009
- “Vai acontecer,” *Diário Económico - Universidades*, 03.11.2009
- “Universidade de Carnegie[Mellon discute tecnologia em Portugal,” *BIT - online*, 06.11.2009
- “Workshop da UTEN Portugal e Carnegie Mellon,” *Ciência.pt*, 06.11.2009
- “Transferência de tecnologia em «workshop» internacional,” *Ciência Hoje*, 07.11.2009
- “IPN recebe especialistas da Universidade de Carnegie Mellon,” *Diário as Beiras*, 07.11.2009
- “Workshop ‘Experiencing Technology Transfer: collaborating with Carnegie Mellon’,” *Ciência.pt*, 08.11.2009
- “As universidades e a transferência de tecnologia,” *Diário de Coimbra*, 10.11.2009
- “Valorização do Conhecimento impulsiona desenvolvimento económico do país,” *Ciência.pt*, 12.11.2009
- “Investir na fixação de empresas estrangeiras cria mais distorção,” *Computerworld.pt*, 17.11.2009
- “Portugal é caso de estudo em Carnegie Mellon,” *Jornal i*, 26.11.2009
- “As PME são a casa natural da inovação,” *OJE*, 26.11.2009
- “Empresas e universidades em parceria,” *Semana Informática*, 18.11.2009
- 2010**
- “UTEN Portugal Workshop: Parcerias para Facilitar Actividades de Comercialização em Universidades,” *umic.pt*, 15.06.2010
- “Ciência e Tecnologia portuguesa na economia global,” *Cienciapt.net*, 17.10.2010
- “Ciência e Tecnologia portuguesa na economia global,” *diário.iol.pt*, 22.10.2010
- “FCT e Universidades Portuguesas estimulam rede nacional de transferência e comercialização de tecnologia,” *pcm.gov.pt*, 22.10.2010
- “Comercialização e internacionalização de Ciência e Tecnologia portuguesa na economia global,” *superindustria.com*, 22.10.2010
- “FCT e Universidades Portuguesas estimulam rede nacional de transferência e comercialização de tecnologia,” *mctes.pt*, 22.10.2010
- “42% dos “spin-offs” da UTEN na área das TIC,” *computerworld.com.pt*, 25.10.2010
- “Medidas de austeridade não vão afectar ciência e tecnologia,” *diário.iol.pt*, 22.10.2010
- “Medidas de austeridade não vão afectar ciência e tecnologia,” *espbr.com*, 25.10.2010
- “Ministro vai testes com que restrições orçamentais não travem desenvolvimento científico,” *Superindustria.com*, 25.10.2010
- “Medidas de austeridade não vão afectar ciência e tecnologia,” *tvi24.iol.pt*, 25.10.2010
- “UTEN revela casos de sucesso portugueses,” *universia.pt*, 25.10.2010
- “Mariano Gago promete defender a área da ciência,” *Diário de Notícias da Madeira*, 26.10.2010
- “Segunda conferência da UTEN em Portugal,” *Diário Económico*, 26.10.2010
- “Mariano Gago promete defender a área da Ciência,” *dnoticias.pt*, 26.10.2010
- “Tecnologia fora das medidas de austeridade,” *i-gov.org*, 26.10.2010
- “Manter investimento contra ‘ventos’ e ‘marés’,” *O Primeiro de Janeiro*, 26.10.2010



Portuguese media was visible at the original signing of the UT Austin | Portugal agreement in 2007.

“Mariano garante que tudo fará para que restrições orçamentais não travem o desenvolvimento científico,” *Diário dos Açores*, 27.10.2010

## 2011

“IC<sup>2</sup> teaches entrepreneurship the American way,” [bizjournals.com/austin](http://bizjournals.com/austin), 22.04.2011

“Valorizar activos gerados nas universidades,” *Diário de Aveiro*, 15.06.2011

“Transferência tecnológica em marcha,” *Semana Informática online*, 27.06.2011

“O poder multiplicador do capital de risco,” *Expresso (weekly)*, 24.09.2011

“Thoughts on Portugal and entrepreneurship: trying to find their way out of the mess through new venture creation,” *New Venturist*, 18.10.2011

“Rising star Portuguese entrepreneur, Sérgio Santos, is organizing the web with Bundlr,” *New Venturist*, 20.10.2011

“Vera Moura, bombing cancer tumors with Treat U,” *New Venturist*, 01.11.2011

“More Thoughts on Portugal, Raymond Vennare, entrepreneur,” *New Venturist*, 04.11.2011

“Obama apoia parcerias com Universidades portuguesas,” *Computerworld*, 10.11.2011

“Porto recebe terceira edição da conferência anual da UTEN Portugal,” *AULP*, 11.11.2011

“Porto recebe terceira edição da conferência anual da UTEN Portugal,” *Ciência Hoje*, 11.11.2011

“Obama apoia as parcerias lusas,” *Jornal da Madeira*, 11.11.2011

“Porto: crise financeira global e empresas de base tecnológica em debate na U.Porto,” *Tek.sapo.pt*, 11.11.2011

“Ciência e Tecnologia,” *RTP 1 - Telejornal*, 14.11.2011

“Como vender ciência e tecnologia no estrangeiro,” *Diário Económico | Universidade e Emprego*, 21.11.2011

“Entrevista: Diretor da UTEN explica contributo da ciência e da tecnologia para a economia,” *OJE – PME News*, 24.11.2011

## 2012

“Could Portuguese startups make it in Pittsburgh?” *New Venturist*, 14.02.2012

“A legislação portuguesa pode estimular a comercialização de tecnologia?”, *Ciência.pt*, 22.02.2012

“Universidades asseguraram um quinto das patentes nacionais em 2011,” *Tek.sapo.pt*, 28.02.2012

“Parcerias com Carnegie Mellon e MIT reavaliadas,” *Diário de Notícias*, 01.03.2012

“Programa estratégico de empreendedorismo atrai mais de 4000 candidaturas,” *AmbienteOnline*, 11.05.2012



“Como financiar uma start-up?” Fibra.pt, 16.05.2012

“Rede UTEN e Programa Carnegie Mellon Portugal promovem Workshop internacional: Como financiar uma start-up?”, superindustria.com, 16.05.2012

“Como angariar financiamento para uma start-up?” Tek.sapo.pt, 16.05.2012

“3 Day Startup: Concretizar ideias de negócio em ambiente de boot camp,” jpn.icicom.up.pt, 17.05.2012

“Workshop internacional «Como financiar uma start-up?» na Universidade do Algarve,” Região Sul Online, 18.05.2012

“Workshop Internacional: como financiar uma start-up?,” Antena 1, 21.05.12

“O desafio de exportar tecnologia,” Jornal de Negócios, 31.05.2012

“Empreendedorismo é resposta às dificuldades,” Semana Informática, 08.06.2012

“Impulsionar o empreendedorismo e a inovação,” Diário Económico, 20.06.2012

“UT Austin Portugal ‘vai ser reduzido’,” Diário Económico, 02.07.2012

“Os business angels investem em pessoas, não em tecnologia,” Tek.sapo.pt, 12.07.2012

“Manter parcerias com as universidades norte-americanas vai depender de cofinanciamento,” TVciência.pt, 11.07.2012

“Bioalvo entra no mercado americano,” expresso.pt, 06.09.2012

“Empresa portuguesa de biotecnologia Bioalvo em colaboração com a AphaVektor,” rcmpharma.com, 06.09.2012

“Portugal Aims to Modernize With Help From the U.S.,” chronicle.com, 12.09.2012

“Programa UT Austin|Portugal garantido por mais cinco anos,” Ciência.pt, 05.11.2012

“Programa UT Austin|Portugal com continuidade garantida,” Ciência.pt, 06.11.2012

“FCT reduz para um terço financiamento de programas internacionais de investigação,” Diário Económico, 12.11.2012

“Programa UT Austin|Portugal tem continuidade garantida,” p3.publico.pt, 12.11.2012

### 3.7 Valorization of IP: BriefWatch on Portuguese Patents

In Portugal, university national patent applications have continuously increased between 2006 and 2009, with growth rates above 20% per year, as seen in table 3.6. In 2010, it is possible to observe a slight decrease, partly recovered in 2011. The effects of the financial restrictions, resulting from the economic crisis, are visible in the in number of patents applied for, in these last years, namely after 2010.

In general, the main applicant universities increased the number of patent applications over the last six years. On an individual level, between 2006 and 2011, University of Beira Interior (UBI) and University of Trás-os-Montes and Alto Douro (UTAD) showed the most distinct growth. In 2006, these universities had the lowest number of patent applications. However, in 2011, UBI had the lead and the UTAD had the third highest number of patent applications. While Instituto Superior Técnico (IST) has significantly decreased the number of patent applications in the last two years, it remains the university with the highest number of accumulated applications (194) in the period 2006-2011.

**Table 3.6 University National Patent Applications**

	2006	2007	2008	2009	2010	2011	June 2012
University of Aveiro	12	5	19	21	17	12	9
University of Minho	8	12	13	12	14	12	11
University of Évora	3	4	1	5	2	1	1
University of Porto	12	8	12	11	3	10	9
University of Coimbra	2	1	1	9	7	9	4
University of Algarve	3	2	5	13	14	5	4
University Nova of Lisboa	3	13	13	11	3	2	0
University of Beira Interior	1	2	1	6	16	17	2
University of Trás-os-Montes and Alto Douro	1	8	6	7	7	13	5
Instituto Superior Técnico	35	43	54	38	9	15	6
Other	4	10	14	36	30	42	17
<b>TOTAL</b>	<b>84</b>	<b>108</b>	<b>139</b>	<b>169</b>	<b>122</b>	<b>138</b>	<b>68</b>

Source: Portuguese Institute of Industrial Property (INPI)

**Table 3.7 National and international patent applications, 2006 - 2011**

	2006	2007	2008	2009	2010	2011
Portuguese Institute of Industrial Property (INPI)	219	283	405	600	527	598
World Intellectual Patent Organization (WIPO)	68	93	100	163	117	96
European Patent Office (EPO)	78	70	84	112	81	77
United States Patent and Trademark Office (USPTO)	23	35	39	36	43	–

Source: Portuguese Institute of Industrial Property (INPI)

As shown in table 3.7, except for the United States, the national and international (WIPO and EPO) patent applications have risen until 2009. In the last two years, the impact of the economic crises in the use of patents seems clear. There was a decline in the number of patent applications in all routes of protection. It was at national level that this effect was less visible, to a certain extent this can be explained by the fact that the protection in Portugal is the one which requires the lowest investment.

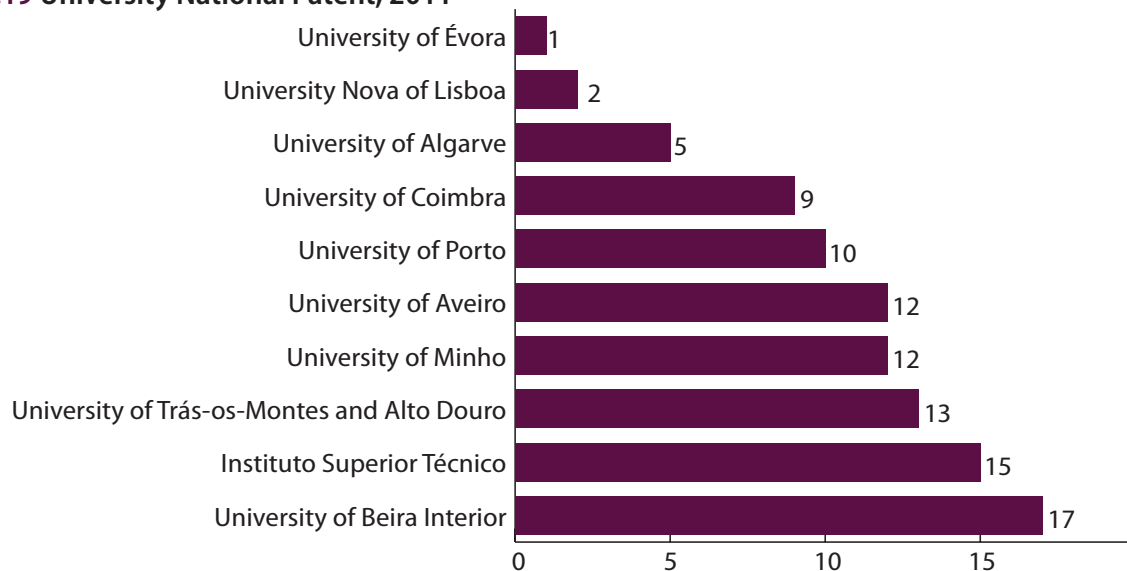
The number of patents applied for directly in the United States increased in 2007, but in the following years the level of applications has been more or less maintained. Moreover, it is interesting to observe that in 2010 there was even a rise in the applications in the United States contrary to the behavior in other routes/territories.

In 2011, EO published 89 patents applications and WIPO published 185 applications, in several technology areas, belonging to Portuguese enterprises, higher education and R&D institutions, and independent inventors. The majority of these applications came from enterprises, followed by universities and then by individuals. The U.S. Patent and Trademark Office (USPTO), in 2011, published 27 patents submitted

by Portuguese entities; enterprises filed 23 of those patents, and while universities filed the remaining 4. Bial Portela & CA SA had the highest number of patent applications published that year (5).

Tables 3.8 (EPO patents), 3.9 (WIPO patents) and 3.10 (U.S. patents) provide a brief overview of the patents published by Portuguese S&T talent in 2011. In recent years, Portugal has systematically developed increased competencies in technology and commercialization; increasingly Portuguese universities, associated laboratories, and research institutions value specialized technical support for technology transfer and commercialization.

The University Technology Enterprise Network (UTEN) has considerably strengthened this movement, as the network engages with scientific and academic institutions throughout Portugal to emphasize technology transfer and commercialization on an international scale. UTEN efforts have been made possible by the promotion and support of The Foundation for Science and Technology (FCT), in close collaboration with the Portuguese Institute of Industrial Property (INPI), and since 2010 with the Council of Rectors of Portuguese Universities (CRUP).

**Figure 3.19 University National Patent, 2011**

Source: INPI, EPO, WIPO



**Table 3.8 EPO Published Patent Applications by Portuguese Applicants (2011)**

Title	Pub. Number	Pub. Date
Method for direct treatment of cork stoppers, using supercritical fluids	EP2396153 (A1)	2011-12-21
Multiple genetic disease diagnostic panels by one single-test using micro-array technology	EP2396421 (A1)	2011-12-21
Apparatus for the retention of (bio)solids and a method for the treatment of a waste material using said apparatus	EP2394966 (A1)	2011-12-14
Seat structure	EP2394846 (A1)	2011-12-14
Device for bicycles or other pedal-powered vehicles	EP2394899 (A2)	2011-12-14
Cup cleaning and drying device	EP2394554 (A2)	2011-12-14
Antibacterial phage, phage peptides and methods of use thereof	EP2393502 (A2)	2011-12-14
Installation part for photovoltaic modules, installation device, and building structure comprising same	EP2394105 (A1)	2011-12-14
Systems and methods for simulating three-dimensional virtual interactions from two-dimensional camera images	EP2391983 (A1)	2011-12-07
Fusion proteins the process to preparation and utilization in expression systems of recombinant proteins	EP2388329 (A2)	2011-11-23
Eslicarbazepine acetate and methods of use	EP2386303 (A1)	2011-11-16
Flush device for a flush tank	EP2385177 (A1)	2011-11-09
Analytical rotors and methods for analysis of biological fluids	EP2384242 (A1)	2011-11-09
Pharmaceutical compounds	EP2382012 (A2)	2011-11-02
Hydroelectric-power central equipped with automatic elevatory station	EP2381089 (A1)	2011-10-26
Various methods and apparatuses for achieving augmented reality	EP2378488 (A2)	2011-10-19
Seat cushion mat with pressure sensor	EP2374652 (A1)	2011-10-12
Glass sealing of dye-sensitized solar cells	EP2374142 (A1)	2011-10-12
Bi-directional continuous perfusion bioreactor for tridimensional culture of mammal tissue substitutes	EP2373780 (A1)	2011-10-12
Postcondensation of plastic granules	EP2367622 (A2)	2011-09-28
Orthotic device for the correction of deformities of the vertebral column	EP2364132 (A1)	2011-09-14
Frame for sliding doors or windows	EP2361339 (A1)	2011-08-31
Insulated batten board for tile roofing and method of roofing a building	EP2360324 (A1)	2011-08-24
Monolithic foundation system	EP2356287 (A2)	2011-08-17
FOXP3 natural killer T-cells and the treatment of immune related diseases	EP2356222 (A2)	2011-08-17
Mudguard for two-wheeled vehicles	EP2351685 (A1)	2011-08-03
Hydroxyapatite and bioglass-based pellets, production process and applications of thereof	EP2349361 (A1)	2011-08-03
Process for preparing chlorins and their pharmaceutical uses	EP2346874 (A1)	2011-07-27
Jet deflection device	EP2344938 (A1)	2011-07-20
Coating composition for acrylic material, reinforced acrylic system having said coating composition and uses thereof	EP2342284 (A2)	2011-07-13
System and process for automatic determination of welding parameters for automated friction stir welding	EP2342040 (A1)	2011-07-13

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(Cont'd next page)



**(Cont'd) Table 3,8 EPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. #</b>	<b>Pub. Date</b>
System and process for automatic determination of welding parameters for automated friction stir welding	EP2342040 (A1)	2011-07-13
Atmospheric resources explorer for harnessing wind power	EP2341242 (A2)	2011-07-06
Ceramic powders coated with a nanoparticle layer and process for obtaining thereof	EP2337821 (A1)	2011-06-29
Process for covering rubber particles with a polymeric film and covered rubber granulates obtained by this process	EP2337812 (A1)	2011-06-29
Button assembly for activating a drain device of a flushing tank, and drain device equipped with this button assembly	EP2336434 (A1)	2011-06-22
Integrated feed and flush assembly	EP2336432 (A1)	2011-06-22
Use of monoolein as a new auxiliary lipid in lipofection	EP2335687 (A2)	2011-06-22
Computer vision device to automatically synchronize the speed and position of manipulator with the moving assembly line in the automotive industry	EP2335885 (A1)	2011-06-22
se of a lupinus protein	EP2333086 (A1)	2011-06-15
Automatic lubricator	EP2333397 (A1)	2011-06-15
Method to generate airport obstruction charts based on a data fusion between interferometric data using synthetic aperture radars positioned on spaceborne platforms and other types of data acquired by remote sensors	EP2330435 (A1)	2011-06-08
A gammacarboxyglutamate-rich protein, methods and assays for its detection, purification and quantification and uses thereof	EP2326664 (A2)	2011-06-01
Device for levelling and adjusting the feed chute of a buried urban solid waste container	EP2325108 (A1)	2011-05-25
Cpc type solar collector with evacuated tubes	EP2324300 (A2)	2011-05-25
System of formwork for flooring	EP2321461 (A1)	2011-05-18
Process for the co-production of chitin, its derivatives and polymers containing glucose, mannose and/or galactose, by the fermentation of the yeast <i>pichia pastoris</i>	EP2321419 (A2)	2011-05-18
Asymmetric catalytic reduction of oxcarbazepine	EP2319836 (A1)	2011-05-11
Use of co-releasing compounds for the manufacture of a medicament for the treatment of inflammatory diseases	EP2319518 (A1)	2011-05-11
Solar concentrating collector of the cpc type with an improved absorbing cavity, without thermal shorts and optical losses	EP2318774 (A2)	2011-05-11
Composite wood-glass structural panel and process for producing same	EP2320002 (A1)	2011-05-11
Tunnel multi-storey	EP2317074 (A1)	2011-05-04
Process for the production of liquid polioles of renewable origin by the liquefaction of agro-forestry and agro-food biomass	EP2313358 (A1)	2011-04-27
Guidance, navigation and information system especially adapted for blind or partially sighted people	EP2313879 (A2)	2011-04-27
Device for reading radio frequency identifiers for volumetric confining of the detection region	EP2313845 (A1)	2011-04-27
Primary concentrator with adjusted etendue combined with secondaries associated to multiple receivers and with convection reduction	EP2313701 (A1)	2011-04-27
Bird feeder	EP2314155 (A1)	2011-04-27
Submerged arc welding device to be mounted on a first workpiece for welding the latter with a second workpiece	EP2311595 (A1)	2011-04-20
Device for measuring and analysing the colour of the outer ear and ear canal	EP2309915 (A2)	2011-04-20
Stabilized aqueous formulation containing paracetamol	EP2307056 (A2)	2011-04-13
Administration regime for nitrocatechols	EP2307020 (A1)	2011-04-13
Protein complexes and screening methods	EP2307449 (A1)	2011-04-13

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**(Cont'd) Table 3.8 EPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. #</b>	<b>Pub. Date</b>
Method and apparatus for manufacturing and filling flexible containers as well as the container obtained	EP2308758 (A1)	2011-04-13
System to catch fish and the respective method of use	EP2303003 (A1)	2011-04-06
Catalytic process for asymmetric hydrogenation	EP2303855 (A2)	2011-04-06
Nitrocatechol derivatives as COMT inhibitors	EP2301934 (A1)	2011-03-30
Pallet container for liquids	EP2301860 (A1)	2011-03-30
Catalytic asymmetric hydrogenation	EP2297042 (A2)	2011-03-23
Athermal fiber bragg grating strain gauge	EP2295946 (A1)	2011-03-16
Fixing base for a child car seat	EP2295287 (A1)	2011-03-16
Sealing stopper for manual removal and reinsertion	EP2291314 (A1)	2011-03-09
Profiles of volatile hydrocarbon compounds, markers of degradation/ageing of cellulosic material and disease markers	EP2293059 (A2)	2011-03-09
Capsulating system binding to nucleolin	EP2291199 (A2)	2011-03-09
Apparatus for making an edible container	EP2288263 (A1)	2011-03-02
Nanometric-sized ceramic materials, process for their synthesis and uses thereof	EP2285479 (A2)	2011-02-23
Methods of distinguishing between glutamine formed by cataplerosis or proteolysis	EP2286238 (A1)	2011-02-23
Safety system against the risk of falling from heights for construction works	EP2286044 (A1)	2011-02-23
Device for halting vehicle traffic	EP2286032 (A1)	2011-02-23
Process for using and producing paper based on natural cellulose fibers, synthetic fibers or mixed fibers as physical support and storing medium for electrical charges in self-sustaining field-effect transistors with memory using active semiconductor oxides	EP2282359 (A2)	2011-02-09
Lumbar support system	EP2281715 (A1)	2011-02-09
Mixing valve with water saving function	EP2273014 (A1)	2011-01-12
Compounds for treating pain	EP2271659 (A1)	2011-01-12
Use of compounds in the treatment of tauopathy	EP2271332 (A1)	2011-01-12
Procedure for the use of natural cellulosic material, synthetic material or mixed natural and synthetic material, simultaneously as physical and dielectric support in self-sustainable field effect electronic and optoelectronic devices	EP2272114 (A1)	2011-01-12
Crystal forms of 5- [3- (2, 5-dichloro-4, 6-dimethyl-1-oxy-pyridine-3-yl) [1,2,4] oxadiazol-5-yl]-3-nitrobenzene-1, 2-diol	EP2276758 (A1)	2011-01-26
Catalytic process for asymmetric hydrogenation	EP2274292 (A1)	2011-01-19
Height adjustable shoe heel with damping mechanism	EP2276366 (A1)	2011-01-26
Hydroxyapatite, biocompatible glass and silicon-based bone substitute, production process and applications of thereof	EP2271376 (A1)	2011-01-12
Polyurethane filters for air purification	EP2274368 (A1)	2011-01-19
A method of adapting video images to small screen sizes	EP2269371 (A1)	2011-01-05

Source: espacenet (EPO), search on WO as the publication number AND 2011 as the publication date AND [PT] as the applicant

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dos Santos Alexandre Maria Barros [PT], Rodrigues Catia Santana Reverendo [PT], Roca Christophe Francois Aime [PT], Moreira de Oliveira Vieira Helena Margarida [PT], Bernardo de Sousa Jose Manuel [PT]Cerejo Marta Isabel Heitor [PT], Mendes da Silva Calado Patricia Ramallete [PT], Pinheiro Ricardo Filipe Antunes [PT], Chaterjee Sukalyan [PT], Ribeiro Marta Maria Batista [PT], Castanho Miguel Augusto Rico Botas [PT], Rodriguez Eduard Bardaji [ES], Corominas Montserraat Heras [ES], avaras Isaura Ferreira [PT], Pinto Marta Sofia Carvalho Teixeira [PT]	Bioalvo Servicos Investigacao e Desenvolvimento em Biotecnologia S A [PT]
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Alves Gomes Firmino [PT], de Almeida Martinho Armando Antonio [PT], Vieira Teixeira Alves Gomez Joao Alexandre [PT], Arvindbhai Kumar Deepak [PT]	Vieira Teixeira Alves Gomez Joao Alexandre [PT]Arvindbhai Kumar Deepak [PT]
da Silva Santos Jose Domingos [PT], Ferreira da Silva Lopes Maria Ascensao [PT], da Cunha Ferreira Botelho Claudia Manuela [PT]	Medmat Innovation Materiais Medicos Lda [PT]Univ do Porto [PT]
Pinto Moises Luzia Goncalves [PT], da Silva Joao Manuel Pires [PT], Bordado Joao Carlos Moura [PT], Barata Antonio Nunes [PT], Valente Jose Boavida [PT]	Pinto Moises Luzia Goncalves [PT]Da Silva Joao Manuel Pires [PT], Bordado Joao Carlos Moura [PT]Barata Antonio Nunes [PT], Valente Jose Boavida [PT]
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**Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

Title	Pub. Number	Pub. Date
Apparatus and method for data stream processing using massively parallel processors	WO2011162628 (A2)	2011-12-29
Sugar mixtures and methods for production and use thereof	WO2011161685 (A2)	2011-12-29
Growing crustaceans	WO2011161449 (A1)	2011-12-29
Macrocyclic tetrapyrrolic compound of the family of porphyrins, chlorins and bacteriochlorins as photosensitizers for photodynamic therapy	WO2011161065 (A1)	2011-12-29
Recyclable coated fabric, based on polyolefin materials, for use as digital printing media	WO2011159180 (A2)	2011-12-22
Universal system for underground storage	WO2011159179 (A2)	2011-12-22
Non-destructive method and device to calculate vigor and vegetative expression in tree-shrub vegetation and application thereof	WO2011158072 (A1)	2011-12-22
Device for measuring knee laxity	WO2011152746 (A1)	2011-12-08
Lignin compositions, systems and methods for processing lignin and/or HCl	WO2011151823 (A1)	2011-12-08
Methods and compounds for the preparation of monofluoromethylated biologically active organic compounds	WO2011151625 (A1)	2011-12-08
Method for monofluoromethylation of organic substrates to prepare biologically active organic compounds	WO2011151624 (A1)	2011-12-08
Profile fixing accessory and system for fixing profiles using said accessory	WO2011149371 (A1)	2011-12-01
Cork fabric and process for the production thereof	WO2011149370 (A1)	2011-12-01
Process for the treatment of lignocellulosic biomass	WO2011149341 (A1)	2011-12-01
Membrane enhanced polymer synthesis	WO2011148177 (A2)	2011-12-01
Non-leaching nanoparticle formulation for the intracellular delivery of hydrophobic drugs and its use to modulate cell activity and differentiation	WO2011145963 (A1)	2011-11-24
System for managing the shared use of bicycles	WO2011145074 (A1)	2011-11-24
Pavement module for generating electric energy from the movement of people and vehicles	WO2011145057 (A2)	2011-11-24
Intelligent hospital bed and method for operating same	WO2011144767 (A1)	2011-11-24
Polymer compositions containing oxazine-based alkoxysilanes	WO2011144575 (A2)	2011-11-24
Silicone resins and their use in polymer compositions	WO2011143931 (A1)	2011-11-24
Polymer compositions containing alkoxysilanes	WO2011143930 (A1)	2011-11-24
Solar station for charging electric vehicles	WO2011142683 (A1)	2011-11-17
Airborne energy generation and distribution	WO2011142682 (A2)	2011-11-17
Viscous carbohydrate compositions and methods for the production thereof	WO2011141904 (A1)	2011-11-17
New particles of tetracyclines and protecting agent	WO2011141708 (A2)	2011-11-17
Piece goods treatment system	WO2011141450 (A1)	2011-11-17
Insole for a shoe and shoe having an insole	WO2011141382 (A1)	2011-11-17

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Leitao Emilia Perpetua Tavares [PT], Turner Craig Robert [GB]	Hovione Int Ltd [CH], Leitao Emilia Perpetua Tavares [PT], Turner Craig Robert [GB]
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Livingston Andrew Guy [GB], Gaffney Piers Robert James [GB], Campos Vasconcelos Renato [PT]	Imp Innovations Ltd [GB], Livingston Andrew Guy [GB], Gaffney Piers Robert James [GB], Campos Vasconcelos Renato [PT]
da Silva Ferreira Lino [PT], Oliveira Malva Joao Jose [PT], Inacio Bernardino Liliana [PT], Ramos Teixeira de Sousa Santos Tiago [PT], Reina Maia E Silva Joao [PT]	Univ Coimbra [PT], da Silva Ferreira Lino [PT], Oliveira Malva Joao Jose [PT], Inacio Bernardino Liliana [PT], Ramos Teixeira de Sousa Santos Tiago [PT], Reina Maia E Silva Joao [PT]
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Cardoso Paulo Alexandre Texeira E Silva [PT]	Cardoso Paulo Alexandre Texeira E Silva [PT]
Eyal Aharon [IL], Jansen Robert [PT]	HCICleantech Ltd [IL], Eyal Aharon [IL], Jansen Robert [PT]
Heggie William [PT], de Faria Cristina Maria Sanches Simoes [PT]	Hovione Int Ltd [CH], Heggie William [PT], de Faria Cristina Maria Sanches Simoes [PT], Turner Craig Robert [GB]
Arsenio Jose [PT], Wegner Christian-Marius [DE],	Siemens Ag [DE], Arsenio Jose [PT], Wegner Christian-Marius [DE]
Gschwender Herbert [PT]	Bodyfeel Produtos de Saude Ltd [PT], Gschwender Herbert [PT]

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**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Routing logic	WO2011141309 (A1)	2011-11-17
Data processor	WO2011141212 (A1)	2011-11-17
Data display	WO2011141211 (A1)	2011-11-17
Automated device integration	WO2011141195 (A1)	2011-11-17
Method of reducing proteins misfolding and/or aggregation	WO2011140315 (A2)	2011-11-10
Touch switch integrated onto a modular covering tile	WO2011138770 (A1)	2011-11-10
Consumer transaction regularity, membership and identification card system, process and computer program	WO2011136673 (A2)	2011-11-03
Process for obtaining bioactive peptide extracts by hydrolysis of whey protein by cynara cardunculus enzymes, aforementioned extracts and respective applications	WO2011135513 (A1)	2011-11-03
A simple capsule-based inhaler	WO2011135327 (A1)	2011-11-03
Method for providing a thermal absorber	WO2011135152 (A1)	2011-11-03
Auxiliary circuit for heating heat storage tanks	WO2011133058 (A2)	2011-10-27
Decorated candle and decoration process for obtaining the same	WO2011133057 (A1)	2011-10-27
Holder for generally cylindrical containers	WO2011132037 (A1)	2011-10-27
Composite grapheno-metal oxide platelet method of preparation and applications	WO2011132036 (A1)	2011-10-27
A process for particle processing of active pharmaceutical ingredients	WO2011131947 (A2)	2011-10-27
Pressure lid for a cooking pot and cooking pot provided therewith	WO2011128396 (A1)	2011-10-20
Mixing device for setting the hot water temperature	WO2011128318 (A2)	2011-10-20
P-type oxide alloys based on copper oxides, tin oxides, tin-copper alloy oxides and metal alloy thereof, and nickel oxide, with embedded metals thereof, fabrication process and use thereof	WO2011125036 (A1)	2011-10-13
Cushion mat with pressure sensor	WO2011124472 (A1)	2011-10-13
Liquid distribution and metering	WO2011122972 (A2)	2011-10-06
Peptide nucleic acid probe, kit and method for detection and/or quantification of salmonella spp. And applications thereof	WO2011121544 (A1)	2011-10-06
System and method for the elimination of toxins through electrolysis	WO2011121539 (A1)	2011-10-06
Secure network coding for multi-resolution wireless video streaming	WO2011119909 (A1)	2011-09-29
Methods and compositions related to the measurement of material properties	WO2011119492 (A2)	2011-09-29
Photo-crosslinked gellan gum-based hydrogels: preparation methods and uses thereof	WO2011119059 (A1)	2011-09-29
F3-peptide targeted lipid-based nanoparticles useful for the treatment of angiogenesis-dependent diseases	WO2011119058 (A2)	2011-09-29

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Pinto Ribeiro Susana Carla [PT]	Fico Cables Lda [PT], Pinto Ribeiro Susana Carla [PT]
Garcia da Fonseca Joao [PT], Esteves Reis Nuno Alexandre [PT]	Biosurfir S A [PT], Garcia da Fonseca Joao [PT], Esteves Reis Nuno Alexandre [PT]
Ribeiro Pinto de Oliveira Azevedo Nuno Filipe [PT], Lopes da Costa Vieira Maria Joao [PT], Fernandes Almeida Carina Manuela [PT], Keevil Charles William [GB]	Univ do Minho [PT], Ribeiro Pinto de Oliveira Azevedo Nuno Filipe [PT], Lopes da Costa Vieira Maria Joao [PT], Fernandes Almeida Carina Manuela [PT], Keevil Charles William [GB]
Dias do Socorro Teixeira Cardoso Paulo Telmo [PT]	Openmed Unipessoal Lda [PT], Dias do Socorro Teixeira Cardoso Paulo Telmo [PT]
Lima Luisa [PT], Gheorghiu Steluta [ES], Barros Joao [PT], Medard Muriel [US], Toledo Alberto Lopez [ES]	Massachusetts Inst Technology [US], Lima Luisa [PT], Gheorghiu Steluta [ES], Barros Joao [PT], Medard Muriel [US], Toledo Alberto Lopez [ES]
Suresh Subra [US], Han Jongyoon [US], Bow Hansen [US], Huang Sha [US], Diez Silva Monica [US], Pivkin Igor V [US], Berris Michal Michelle [US], Dao Ming [US], Karniadakis George E [US], Caswell Bruce [US], Fedosv Dmitry [DE], Quinn David J [US], Chen Jianzhu [US], Chang Irene Yin-Ting, Almeida Carvalho Patricia Maria [PT]	Massachusetts Inst Technology [US], Univ Brown Res Found [US], Suresh Subra [US], Han Jongyoon [US], Bow Hansen [US], Huang Sha [US], Diez Silva Monica [US], Pivkin Igor V [US], Berris Michal Michelle [US], Dao Ming [US], Karniadakis George E [US], Caswell Bruce [US], Fedosv Dmitry [DE], Quinn David J [US], Chen Jianzhu [US], Chang Irene Yin-Ting Almeida Carvalho Patricia Maria [PT]
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Sereno de Almeida Moreira Joao Nuno [PT], Gomes da Silva Ligia Catarina [PT], Bimbo Luis [PT], Oliveira dos Santos Adriana [PT], Pedroso de Lima Maria da Conceicao [PT], de Magalhaes Simoes Sergio Paulo [PT]	Univ Coimbra [PT], Ct de Neurociencias e Biolog Celular [PT], Sereno de Almeida Moreira Joao Nuno [PT], Gomes da Silva Ligia Catarina [PT], Bimbo Luis [PT], Oliveira dos Santos Adriana [PT], Pedroso de Lima Maria da Conceicao [PT], de Magalhaes Simoes Sergio Paulo [PT]



**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Hydroxy-2,3-diarylxanthenes as therapeutic agents of pathologies due to reactive oxygen species	W02011117690 (A1)	2011-09-29
Immunoglobulin single variable domains directed against cxcr7	W02011117423 (A1)	2011-09-29
Ceramic laminated panel with cork and fibres	W02011115514 (A2)	2011-09-22
Partition building block and method of use	W02011114301 (A2)	2011-09-22
A nanoparticle comprising a micelle formed by an amphiphilic block- copolymer and encapsulating a gadolinium complex	W02011113616 (A1)	2011-09-22
System to change colour instantaneously downstream from the barrel during thermoplastics injection moulding	W02011112107 (A1)	2011-09-15
Block for construction and method to build walls with said block	W02011111002 (A1)	2011-09-15
Dye-sensitized solar cells	W02011110991 (A1)	2011-09-15
Optical modulator	W02011110422 (A1)	2011-09-15
Piece of furniture and fitting for a piece of furniture	W02011110201 (A1)	2011-09-15
System, method, and computer program product for performing actions based on received input in a theater environment	W02011109903 (A1)	2011-09-15
Multi -targeting system comprising a nanocarrier, nucleic acid(s) and non-nucleic acid based drug(s)	W02011108955 (A1)	2011-09-09
An integrated, washable and reusable three-dimensional (3d) multifunctional knitted fabric structure and method to produce the same	W02011108954 (A1)	2011-09-09
Virtual walking stick for assisting blind people	W02011104589 (A1)	2011-09-01
Turbine with radial inlet and outlet rotor for use in bidirectional flows	W02011102746 (A2)	2011-08-25
Electronic cylinder	W02011102745 (A1)	2011-08-25
Device for extracting hot beverage infusions from the undifferentiated use of packagings and control system of a hydraulic group of extraction with thermoblock	W02011101712 (A1)	2011-08-25
Transmission and reproduction system of informative contents	W02011098902 (A1)	2011-08-18
Device for shaping edible products, procedure for shaping edible products and edible product	W02011098846 (A1)	2011-08-18
Industrial gas scrubber	W02011093735 (A1)	2011-08-04
Methods of synthesizing factor XA inhibitors	W02011084519 (A1)	2011-07-14
Process and machine for the selective separation, treatment and bagging of recyclable and unsorted urban, household or industrial solid waste	W02011084078 (A1)	2011-07-14
Viscous carbohydrate compositions and methods of producing the same	W02011089589 (A1)	2011-07-28
Tunable dielectric composite and method for the production thereof	W02011083348 (A1)	2011-07-14
Method for generation of immunoglobulin sequences by using lipoprotein particles	W02011083141 (A2)	2011-07-14
Gas forced air burner having modulatable burner power and method for operating a gas forced air burner	W02011082924 (A2)	2011-07-14
Enclosure of anodized multi-layer metallic shell with molded plastic scaffolding and method of manufacture	W02011087487 (A1)	2011-07-21
Height-adjustable flushing valve group for a flushing tank	W02011086452 (A1)	2011-07-21

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Gonzalez Pajuelo Maria, Hermans Guy, Vanlandschoot Peter	Ablynx Nv, Gonzalez Pajuelo Maria, Hermans Guy, Vanlandschoot Peter
Melo Marco [PT]	Bosch Gmbh Robert [DE], Melo Marco [PT]
Du Shouzhong Alex [SG], Michonski Richard Dale [US], Qin Jichen Jeff [CN], Li Wu Bing Levin [CN], Narotamo Suriaprakash [PT]	Flextronics Ap Llc [US], Du Shouzhong Alex [SG], Michonski Richard Dale [US], Qin Jichen Jeff [CN], Li Wu Bing Levin [CN], Narotamo Suriaprakash [PT]
Freitas Machado Joao Tiago [PT]	Oliveira & Irmao Sa [PT], Freitas Machado Joao Tiago [PT]

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**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Fucose-containing bacterial biopolymer	W02011073874 (A2)	2011-06-23
Mbms coverage control optimiser method using point -to- multipoint transmission mode based on context information	W02011081542 (A2)	2011-07-07
Passive and remote method of pump control in remote amplified systems	W02011080633 (A2)	2011-07-07
Hydroelectric generator	W02011080551 (A2)	2011-07-07
Non-destructive and non-invasive method for inspecting vegetable materials involving the use of electromagnetic radiation	W02011078714 (A1)	2011-06-30
Surface plasmon resonance detection system	W02011078713 (A1)	2011-06-30
Combination composition useful for treating cardiovascular diseases	W02011078712 (A1)	2011-06-30
New use of pulsed radio frequency	W02011078676 (A1)	2011-06-30
Easy insertion/reinsertion stopper for use with still wine	W02011074998 (A1)	2011-06-23
Autonomous pain recording apparatus connected to a computer or another data processing device	W02011074997 (A2)	2011-06-23
Diffusion decoration technology	W02011071693 (A1)	2011-06-16
System and method for overmolding of decorated plastic parts	W02011071539 (A1)	2011-06-16
Method and micro device for the extraction of traces of chemical substances with different polarities	W02011071406 (A1)	2011-06-16
Method for determining a fibre fuse effect in optical networks and corresponding monitor	W02011071405 (A1)	2011-06-16
Immunogens, compositions and uses thereof, method for preparing same	W02011071404 (A1)	2011-06-16
Trap locking system	W02011071403 (A1)	2011-06-16
Mortars containing phase change material microcapsules, their preparation process and use	W02011071402 (A1)	2011-06-16
Wireless passive voting device and system	W02011071401 (A1)	2011-06-16
Method and composition for preparing stable liquid formulations of paracetamol	W02011071400 (A1)	2011-06-16
Dextrin hydrogel for biomedical applications	W02011070529 (A2)	2011-06-16
Method and apparatus for the deterministic capture of a communication channel shared among contention-based technologies	W02011070449 (A1)	2011-06-16
Optical system and method for monitoring the physical structure of optical networks, based on otdr with remote detectors	W02011070404 (A1)	2011-06-16
A dry active bio signal electrode with an hybrid organic-inorganic interface material	W02011070403 (A1)	2011-06-16
Photovoltaic modules and manufacturing process - interconnection of dye-sensitized solar cells	W02011070401 (A2)	2011-06-16
Ceramics produced from solid waste incineration bottom ash	W02011070399 (A1)	2011-06-16
Metallic MG oxygen diffusion barrier diffusion applied for electronic devices	W02011070398 (A1)	2011-06-16
Hybrid vanadium catalysts and use thereof in selective cycloalkane oxidation processes	W02011070397 (A1)	2011-06-16

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Suriaprakash Narotamo [PT], Hill Charles Raymon [US], Qin Jeff [CN], Wang Zhong [CN]	Flextronics Ap Llc [US], Suriaprakash Narotamo [PT], Hill Charles Raymon [US], Qin Jeff [CN], Wang Zhong [CN]
Qin Jeff Jichen [CN], Hill Charles R [US], Narotamo Suriaprakash [PT], Li Wu Bing Levin [CN], Wu Spring [CN], Wang Zhong [CN]	Flextronics Ap Llc [US], Qin Jeff Jichen [CN], Hill Charles R [US], Narotamo Suriaprakash [PT], Li Wu Bing Levin [CN], Wu Spring [CN], Wang Zhong [CN]
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Cardoso dos Santos Lourenco Armando Antonio [PT], Yann Rauwel Erwan [NO]	Univ Aveiro [PT], Cardoso dos Santos Lourenco Armando Antonio [PT], Yann Rauwel Erwan [NO]
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**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Variable geometry air intake system for internal combustion engines	W02011070395 (A1)	2011-06-16
Method and kit for DNA extraction from vitis vinifera L. And for amplification and detection of grapevine varieties or cultivars in musts or wines	W02011067630 (A1)	2011-06-09
Multi -layered sandwich structure panel	W02011067629 (A1)	2011-06-09
Water mixing system with water saving function	W02011067628 (A2)	2011-06-09
Method for preparing coated binder units and a system for use therein	W02011067355 (A1)	2011-06-09
Method for preparing coated binder units and device for use therein	W02011067354 (A2)	2011-06-09
On-window solar-cell heat-spreader	W02011066286 (A2)	2011-06-03
Biocompostable polymer blends	W02011065855 (A1)	2011-06-03
Enterococcal phage peptides and methods of use thereof	W02011065854 (A1)	2011-06-03
Process of cork expansion with environmentally innocuous compounds	W02011065853 (A1)	2011-06-03
Laminated boards with improved sound insulation properties	W02011065852 (A1)	2011-06-03
Three-dimensional shaped nonwoven structures for acoustic insulation and production method thereof	W02011065851 (A1)	2011-06-03
Capsules of active pharmaceutical ingredients and polyunsaturated fatty acid esters for the treatment of cardiovascular diseases	W02011060945 (A2)	2011-05-26
Active pharmaceutical ingredient capsules and polyunsaturated fatty acid esters	W02011060944 (A2)	2011-05-26
Pharmaceutical formulations containing beta- blocking active ingredient capsules and polyunsaturated fatty acid esters	W02011060943 (A1)	2011-05-26
Ice supplemented with algae and/or derivatives, process for obtaining thereof and applications thereof	W02011058398 (A1)	2011-05-19
Process for preparing 4-nitro-oxy-methyl-benzoic acid	W02011058162 (A1)	2011-05-19
Process for preparing (11beta, 16alpha)-9-fluoro-11-hydroxy-16,17-[1-methyl-ethylidenebis(oxy)]-21-[1-oxo-[4-(nitrooxymethyl)benzoxy]]pregna-1,4-dien-3,20-dione	W02011058161 (A2)	2011-05-19
Machine and process for the infusion of beverages	W02011056085 (A2)	2011-05-12
A hydrogen or oxygen electrochemical pumping catalytic membrane reactor and its applications	W02011055343 (A2)	2011-05-12
Outlet for a washing installation	W02011054121 (A2)	2011-05-12
High precision positioning system suitable for a mobile land platform	W02011046461 (A1)	2011-04-21
Dynamic biocompatible cage for replacing intervertebral disks of the vertebral column	W02011046460 (A1)	2011-04-21
Adjustable device for replacing intervertebral disks of the vertebral column	W02011046459 (A1)	2011-04-21
Biosensor	W02011045570 (A2)	2011-04-21
Method and apparatus for manufacturing and filling flexible containers as well as the container obtained	W02011043684 (A1)	2011-04-14



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Minano Juan Carlos [ES], Benitez Pablo [ES], Chaves Julio C [PT], Falicoff Waqidi [US], Sun Yupin [US]	Minano Juan Carlos [ES], Benitez Pablo [ES], Chaves Julio C [PT], Falicoff Waqidi [US], Sun Yupin [US]
Meneses Rita Alexandra [PT], Coutinho Joao Francisco [PT], Soares Antonio Alexandre [PT]	Cabopol Ind de Compostos S A [PT], Meneses Rita Alexandra [PT], Coutinho Joao Francisco [PT], Soares Antonio Alexandre [PT]
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Parente Duenia Antonio [ES], Carminati Paolo	GP Pharm S A [ES], Defiante Farmaceutica S A [PT], Parente Duenia Antonio [ES], Singrossi Maria Gabriella [IT], Carminati Silvia [IT], Carminati Giuseppe Paolo [IT]
Parente Duenia Antonio [ES], Carminati Paolo, Singrossi, Maria Gabriella, Carminati Silvia, Carminati Giuseppe Paolo	GP Pharm S A [ES], Defiante Farmaceutica S A [PT], Parente Duenia Antonio [ES]
Parente Duenia Antonio [ES], Carminati Paolo	GP Pharm S A [ES], Defiante Farmaceutica S A [PT], Parente Duenia Antonio [ES], Singrossi Maria Gabriella [IT], Carminati Silvia [IT], Carminati Giuseppe Paolo [IT]
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Nabeiro Rui Miguel [PT]	Tecnidelta Equipamentos Hoteleiros Lda [PT], Nabeiro Rui Miguel [PT]
Magalhaes Mendes Adelio Miguel [PT]	Cuf Quimicos Ind S A [PT], Magalhaes Mendes Adelio Miguel [PT]
Vaucher Vincent [CH], Tschantre Alfred [CH], Klopfenstein Andre [CH], Widmer Heinz [CH], Moulin Blaise [FR], Hirniak Andrew [CH], Santos Sergio Miguel Vale [PT], Corte Real Jose Diogo Domingues Dos Santos [PT]	Creaholic Sa [CH], Bosch Gmbh Robert [DE], Vaucher Vincent [CH], Tschantre Alfred [CH], Klopfenstein Andre [CH], Widmer Heinz [CH], Moulin Blaise [FR], Hirniak Andrew [CH], Santos Sergio Miguel Vale [PT], Corte Real Jose Diogo Domingues Dos Santos [PT]
Enes Baganha Baptista Paulo Renato [PT], Reis Cunha Telmo [PT], Almeida Bernardes Cristina Maria [PT]	Univ Aveiro [PT], Enes Baganha Baptista Paulo Renato [PT], Reis Cunha Telmo [PT], Almeida Bernardes Cristina Maria [PT]
Laranjeira Gomes Manuel [PT], Fontes Pinto dos Reis Ana Mafalda [PT], R S Tavares Joao Manuel [PT], Teixeira Santos Isa [PT]	Manuel Laranjeira Gomes [PT], Laranjeira Gomes Manuel [PT], Fontes Pinto dos Reis Ana Mafalda [PT], R S Tavares Joao Manuel [PT], Teixeira Santos Isa [PT]
Laranjeira Gomes Manuel [PT], Fontes Pinto dos Reis Ana Mafalda [PT], R S Tavares Joao Manuel [PT], Teixeira Santos Isa [PT]	Manuel Laranjeira Gomes [PT], Laranjeira Gomes Manuel [PT], Fontes Pinto dos Reis Ana Mafalda [PT], R S Tavares Joao Manuel [PT], Teixeira Santos Isa [PT]
Bensimon David [FR], de Freitas Paulo Jorge Peixeiro [PT], Firman Keith [GB]	Centre Nat Rech Scient [FR], Univ Portsmouth [GB], Ecole Normale Superieure L [FR], Nanotecnologias [PT], Bensimon David [FR], de Freitas Paulo Jorge Peixeiro [PT], Firman Keith [GB]
Sabino Correia Claudio Miguel [PT]	Iasopor Equipamentos de Embalagem Unipessoal Lda [PT], Sabino Correia Claudio Miguel [PT]

(Cont'd next page)

**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Immunoglobulin single variable domain directed against human CXCR4 and other cell associated proteins and methods to generate them	W02011042398 (A1)	2011-04-14
Methods for the recovery of HCl and for the production of carbohydrates	W02011039751 (A2)	2011-04-07
Home use electric machine and system with micro needles for stimulation of collagen and elastin producing cells	W02011039728 (A1)	2011-04-07
Method and device for high-sensitivity multi point detection and use thereof in interaction through air, vapour or blown air masses	W02011039713 (A2)	2011-04-07
Energy generation and/or storage device based on fibres and thin films	W02011039576 (A1)	2011-04-07
Grinder-dispenser apparatus for frozen material	W02011038749 (A1)	2011-04-07
Combined lifting device for bedridden patients	W02011037486 (A1)	2011-03-31
Subscriber identification management broker for fixed/mobile networks	W02011036484 (A2)	2011-03-31
Range-centric contextual information systems and methods	W02011034454 (A1)	2011-03-24
Context - triggered systems and methods for information and services	W02011034453 (A1)	2011-03-24
Pigment composition and coating color containing the same, for printing paper for inkjet printing	W02011034452 (A1)	2011-03-24
Method for the preparation at low temperatures of ferroelectric thin films, the ferroelectric thin films thus obtained and their applications	W02011033343 (A1)	2011-03-24
Oral suspension formulations of esclicarbazepine acetate	W02011031176 (A1)	2011-03-17
Peptide nucleic acid probes, kit and method for detecting helicobacter pylori and/or clarithromycin resistance profile and applications	W02011030319 (A1)	2011-03-17
Water saving system to be used in water heaters for hot water supply	W02011030188 (A2)	2011-03-17
Attachment base for a child seat for a motor vehicle	W02011029951 (A1)	2011-03-17
Method for configuration soa-based automation devices and for developing an orchestration machine, production method and production system in service-oriented architecture having embedded service orchestration engine	W02011029887 (A2)	2011-03-17
Feed additives for aquaculture and aquarium culture	W02011027279 (A1)	2011-03-10
Double-faced tennis racket	W02011025401 (A1)	2011-03-03
Flexible couplings for tubular members	W02011023557 (A1)	2011-03-03
Method and arrangement for in service raman gain measurement and monitoring	W02011023220 (A1)	2011-03-03
Stepped flow-line concentrators and collimators	W02011022631 (A2)	2011-02-24
Structure of a seat for vehicles	W02011021952 (A1)	2011-02-24
Device for dispensing volatile substances according to the reed diffuser principle	W02011020519 (A1)	2011-02-24
Amorphous multicomponent dielectric based on the mixture of high band gap and high k materials, respective devices and manufacture	W02011016741 (A2)	2011-02-10

Inventor(s)	Applicant(s)
Beste Gerald [BE], Staelens Stephanie [BE], Vanlandschoot Peter [BE], Pajuelo Maria Gonzalez [PT], Revets Hilde Adi Pierrette [BE], Schotte Peter [BE], Stals Hilde [BE], Brige Ann [BE], Dewilde Maarten [BE], Stortelers Catelijne [BE]	Ablynx Nv [BE], Beste Gerald [BE], Staelens Stephanie [BE], Vanlandschoot Peter [BE], Pajuelo Maria Gonzalez [PT], Revets Hilde Adi Pierrette [BE], Schotte Peter [BE], Stals Hilde [BE], Brige Ann [BE], Dewilde Maarten [BE], Stortelers Catelijne [BE]
Jansen Robert [PT]	HCICleantech Ltd [IL], Eyal Aharon [IL], Jansen Robert [PT]
Gil Almeida Sara [PT]	Gil Almeida Sara [PT]
Reis Barbosa Afonso Manuel [PT], Fernandes Marques Pedro Luis [PT], Magalhaes Fonseca Miguel Angelo [PT], Fernandes Peixoto de Oliveira Jose Miguel [PT], Amaral Rodrigues Rui Pedro [PT], Magalhaes Santos Nuno Filipe [PT], da Cunha Trabulo Pedro Miguel [PT], Barbosa Joao Paulo [PT]	Edigma Com Sa [PT], Reis Barbosa Afonso Manuel [PT], Fernandes Marques Pedro Luis [PT], Magalhaes Fonseca Miguel Angelo [PT], Fernandes Peixoto de Oliveira Jose Miguel [PT], Amaral Rodrigues Rui Pedro [PT], Magalhaes Santos Nuno Filipe [PT], da Cunha Trabulo Pedro Miguel [PT], Barbosa Joao Paulo [PT]
de Paiva Martins Rodrigo Ferrao [PT], Correia Fortunato Elvira Maria [PT], Mercedes Ferreira Isabel Maria [PT], Miranda Ribeiro Borges Joao Paulo [PT], Bernardino Baptista Ana Catarina [PT], de Albuquerque Bras Bruno Andre [PT]	Univ Nova de Lisboa [PT], de Paiva Martins Rodrigo Ferrao [PT], Correia Fortunato Elvira Maria [PT], Mercedes Ferreira Isabel Maria [PT], Miranda Ribeiro Borges Joao Paulo [PT], Bernardino Baptista Ana Catarina [PT], de Albuquerque Bras Bruno Andre [PT]
Post Jan [NL], Aleksijovski Goran [NL], Dijkstra Wouter [NL], Bormetti Cristian [IT], Bianchi Marco [IT], Honsbeek Bob [NL]	Starstatus Trading Internac Lda [PT], Fast & Fluid Man B V [NL], Post Jan [NL], Aleksijovski Goran [NL], Dijkstra Wouter [NL], Bormetti Cristian [IT], Bianchi Marco [IT], Honsbeek Bob [NL]
Garces da Silva Irene Maria de Lourdes [PT]	Garces da Silva Irene Maria de Lourdes [PT]
Tagg James Peter [GB], Guy III Edward Thomas [US], Evans Timothy Paul [GB], Snijder Robert [CH], Borisoglebski Igor [PT], Campbell Alistair James [GB], Sequeira Claudio Miguel Canario [PT]	Truphone Ltd [GB], Tagg James Peter [GB], Guy III Edward Thomas [US], Evans Timothy Paul [GB], Snijder Robert [CH], Borisoglebski Igor [PT], Campbell Alistair James [GB], Sequeira Claudio Miguel Canario [PT]
Danado Jose Carlos dos Santos [PT], Tavares Afonso Miguel Romeiras Lourenco Varzea [PT], Frazao Joao Pedro Gomes da Silva [PT], Franco Ivan de Almeida Soares [PT]	Ydreams Informatica S A [PT], Danado Jose Carlos dos Santos [PT], Tavares Afonso Miguel Romeiras Lourenco Varzea [PT], Frazao Joao Pedro Gomes da Silva [PT], Franco Ivan de Almeida Soares [PT]
Danado Jose Carlos Dos Santos [PT], Tavares Afonso Miguel Romeiras Lourenco Varzea [PT], Frazao Joao Pedro Gomes da Silva [PT], Franco Ivan de Almeida Soares [PT]	Ydreams Informatica S A [PT], Danado Jose Carlos dos Santos [PT], Tavares Afonso Miguel Romeiras Lourenco Varzea [PT], Frazao Joao Pedro Gomes da Silva [PT], Franco Ivan De Almeida Soares [PT]
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Vasconcelos Teofilo Cardoso de [PT], Santos Lima Ricardo Jorge dos [PT], Campos Costa Rui Cerdeira de [PT], Costa Barrocas Pedro Miguel da [PT], Castro Pereira Ligia Sofia de [PT]	Bial Portela & C A S A [PT], Vasconcelos Teofilo Cardoso de [PT], Santos Lima Ricardo Jorge dos [PT], Campos Costa Rui Cerdeira de [PT], Costa Barrocas Pedro Miguel da [PT], Castro Pereira Ligia Sofia de [PT]
Ribeiro Pinto de Oliveira Azevedo Nuno Filipe [PT], Macieira Cerqueira Laura Isabel [PT], Torres Faria Nuno Ricardo [PT], Lopes da Costa Vieira Maria Joao [PT]	Univ do Minho [PT], Ribeiro Pinto de Oliveira Azevedo Nuno Filipe [PT], Macieira Cerqueira Laura Isabel [PT], Torres Faria Nuno Ricardo [PT], Lopes da Costa Vieira Maria Joao [PT]
Ferreira da Costa Vitor Antonio [PT]	Univ Aveiro [PT], Ferreira da Costa Vitor Antonio [PT]
Santos Emanuel [PT], Ferreira Valdemar [PT]	Bebecar Utilidades para Crianca S A [PT], Santos Emanuel [PT], Ferreira Valdemar [PT]
Colombo Armando Walter [DE], Mendes Joao Marco [PT], Bepperling Axel [DE]	Schneider Electric Automation Gmbh [DE], Colombo Armando Walter [DE], Mendes Joao Marco [PT], Bepperling Axel [DE]
Pereira Velez Zelia Cristina [PT], Colin Hubbard Peter [PT], Detlef Hardege Joerg [GB], Welham Kevin John [GB], Picoto Barata Eduardo Nuno [PT], Mendonça Canario Adelino Vicente [PT]	Univ do Algarve [PT], Ct de Ciencias do Mar do Algarve [PT], Univ Evora [PT], Univ Hull [GB], Pereira Velez Zelia Cristina [PT], Colin Hubbard Peter [PT], Detlef Hardege Joerg [GB], Welham Kevin John [GB], Picoto Barata Eduardo Nuno [PT], Mendonça Canario Adelino Vicente [PT]
Silvestre Monteiro Jose Manuel [PT]	Silvestre Monteiro Jose Manuel [PT]
Carmona da Mota Augusto [PT]	Dynamic Dinosaurs Bv [NL], Carmona da Mota Augusto [PT]
Clouet Benoit [PT]	Nokia Siemens Networks Oy [FI], Clouet Benoit [PT]
Minano Juan Carlos [ES], Benitez Pablo [ES], Chaves Julio C [PT], Hernandez Maikel [ES]	Light Prescriptions Innovators [US], Minano Juan Carlos [ES], Benitez Pablo [ES], Chaves Julio C [PT], Hernandez Maikel [ES]
Teixeira Coelho Jose Antonio [PT], Ferreira dos Santos Oliveira Jose Paulo [PT], Clemente Matos Hernani Jose [PT], Eisgueira Oliveira Pedro Miguel [PT], Vieira Correia Gomes de Oliveira Antonio Jose [PT]	Acecia Componentes Integrados para a Ind Automovel Ace [PT], Teixeira Coelho Jose Anto-nio [PT], Ferreira dos Santos Oliveira Jose Paulo [PT], Clemente Matos Hernani Jose [PT], Eisgueira Oliveira Pedro Miguel [PT], Vieira Correia Gomes de Oliveira Antonio Jose [PT]
Vieira Pedro Queiroz [PT]	CTR Lda [PT], Vieira Pedro Queiroz [PT]
de Paiva Martins Rodrigo Ferrao [PT], Correia Fortunato Elvira Maria [PT], Candido Barquinha Pedro Miguel [PT], Nunes Pereira Luis Miguel [PT], Goncalves Goncalo Pedro [PT], Kuscser Hrovatin Danjela [SI], Kosec Marija [SI]	Univ Nova de Lisboa [PT], Inst Stefan Josef [SI], Univ Barcelona [ES], de Paiva Martins Rodrigo Ferrao [PT], Correia Fortunato Elvira Maria [PT], Candido Barquinha Pedro Miguel [PT], Nunes Pereira Luis Miguel [PT], Goncalves Goncalo Pedro [PT], Kuscser Hrovatin Danjela [SI], Kosec Marija [SI]

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**(Cont'd) Table 3.9 WIPO Published Patent Applications by Portuguese Applicants (2011)**

<b>Title</b>	<b>Pub. Number</b>	<b>Pub. Date</b>
Parts handling device	W02011016740 (A1)	2011-02-10
Device enabling reduction of sailboat heel	W02011018692 (A2)	2011-02-17
Footwear	W02011015632 (A1)	2011-02-10
Modulation of phospholipase d for the treatment of the acute and chronic effects of ethanol	W02011014622 (A1)	2011-02-03
Electrochromic touchscreen	W02011014087 (A1)	2011-02-03
Method for manufacturing a multi-material product through mould injection and its mould	W02011010295 (A2)	2011-01-27
Modular system for concentration of solar radiation	W02011014086 (A2)	2011-02-03
Fibre-reinforced cork-based composites	W02011014085 (A2)	2011-02-03
Chiral stationary phases based on xanthone derivatives	W02011010284 (A2)	2011-01-27
Photovoltaic conversion	W02011010227 (A2)	2011-01-27
Systems and methods for inputting transient data into a persistent world	W02011008120 (A1)	2011-01-20
Operator control device	W02011009755 (A1)	2011-01-27
Fermented product based on milk whey permeate: production processes and uses	W02011005128 (A2)	2011-01-13
Stable crystalline polymorph of 2-(2-chloro-4-mesyl- benzoyl)-cyclohexane/-1,3-dione and process for preparing the same	W02011005127 (A1)	2011-01-13
Method for optimizing petri net orchestrated processes for service-oriented automation devices in service-oriented automated systems	W02011003837 (A1)	2011-01-13
Denim trousers for lady	W02011002324 (A1)	2011-01-06
Method for direct production of <sup>99m</sup> Tc - technetium 99 metastable from low energy accelerators	W02011002323 (A2)	2011-01-06
Photocatalytic coating for the controlled release of volatile agents	W02011012935 (A2)	2011-02-03
Aqueous coating compositions for use in surface treatment of cellulosic substrates	W02011012934 (A2)	2011-02-03
Process for obtaining mushroom dietary fiber and respective fiber	W02011012933 (A1)	2011-02-03
Systems for producing clean and renewable types of energy	W02011006546 (A1)	2011-01-20
Use of 5h-dibenz / b, f/ azepine-5-carboxamide derivatives for treating fibromyalgia	W02011014084 (A1)	2011-02-03
Arm for spectacles and associated spectacles	W02011010001 (A1)	2011-01-27
Telescopic tower assembly and method	W02011006526 (A1)	2011-01-20
Rotational sanitary unit	W02011002322 (A1)	2011-01-06

Source: espacenet (EPO), search on WO as the publication number AND 2011 as the publication date AND [PT] as the applicant

Inventor(s)	Applicant(s)
Silva Pedro Miguel [PT]	Lamboser Metalurgica S A [PT], Silva Pedro Miguel [PT]
Fontes Joao Antonio Crespo [PT]	Fontes Joao Antonio Crespo [PT]
Gschwender Herbert [PT]	Bodyfeel Produtos de Saude Ltd [PT], Gschwender Herbert [PT]
Dipaolo Gilbert [US], Oliveira Tiago Gil [PT], Frere Samuel G [FR], Wenk Markus [SG], Chan Robin [SG]	Univ Columbia [US], Dipaolo Gilbert [US], Oliveira Tiago Gil [PT], Frere Samuel G [FR], Wenk Markus [SG], Chan Robin [SG]
Ferreira Tiago Jose Monteiro Baptista Cabral [PT], Baptista Carlos Alberto Pinheiro [PT], Henriques Ines Domingues da Silva [PT]	Ydreams Informatica S A [PT], Ferreira Tiago Jose Monteiro Baptista Cabral [PT], Baptista Carlos Alberto Pinheiro [PT], Henriques Ines Domingues da Silva [PT]
Soares Albergaria Rui Pedro [PT], Pereira de Bastos Manuel Luis [PT], Caminha de Barros e Castro Artur Manuel [PT], de Pinho Barbosa Jose Carlos [PT],	Simoldes Plasticos S A [PT], Mda Moldes de Azemeis S A [PT], Soares Albergaria Rui Pedro [PT], Pereira de Bastos Manuel Luis [PT], Caminha de Barros e Castro Artur Manuel [PT], de Pinho Barbosa Jose Carlos [PT]
dos Santos Teixeira Ramos Leonel Jose [PT]	dos Santos Teixeira Ramos Leonel Jose [PT]
Fernandes Emanuel Mouta [PT], Silva Vitor Manuel Correlo da [PT], Chagas Jose Antonio Marchao das [PT] Reis Rui Luis Goncalves dos [PT]	Amorim Revestimentos S A [PT], Fernandes Emanuel Mouta [PT], Silva Vitor Manuel Correlo da [PT], Chagas Jose Antonio Marchao das [PT], Reis Rui Luis Goncalves dos [PT]
de Magalhaes Pinto Madalena Maria [PT], Tiritan Maria Elizabeth [PT], Garcia Fernandes Carla Sofia [PT], Cass Quezia Bezerra [BR],	Univ do Porto [PT], Cooperativa de Ensino Superior Politecnico e Universitario Crl [PT], Fundacao Universidade Fed de Sao Carlos [BR], de Magalhaes Pinto Madalena Maria [PT], Tiritan Maria Elizabeth [PT], Garcia Fernandes Carla Sofia [PT], Cass Quezia Bezerra [BR]
Garcia da Fonseca Joao [PT]	Garcia da Fonseca Joao [PT]
Lopes Goncalo Cardoso [PT], Frazao Joao Pedro Gomes da Silva [PT], de Almeida Andre Rui Soares Pereira [PT], Cardoso Nuno Ricardo Sequeira [PT], de Almada Antao Bastos Carrico Vaz [PT], Franco Ivan de Almeida Soares [PT]	Ydreams Informatica S A [PT], Lopes Goncalo Cardoso [PT], Frazao Joao Pedro Gomes da Silva [PT], de Almeida Andre Rui Soares Pereira [PT], Cardoso Nuno Ricardo Sequeira [PT], de Almada Antao Bastos Carrico Vaz [PT], Franco Ivan de Almeida Soares [PT]
Salustio Sergio Varo Oliveira Loureiro [PT], Monteiro Bruno [PT], Fernandes Daniel [PT]	Bosch Gmbh Robert [DE], Salustio Sergio Varo Oliveira Loureiro [PT], Monteiro Bruno [PT], Fernandes Daniel [PT]
Abraham Analia [AR], Gomez-Zavaglia Andrea [AR], Garrote Graciela [AR], Brandi Lucia [AR], de Antoni Graciela [AR], Martins Ribeiro da Silva Lourenco Rui Fausto [PT]	Univ Coimbra [PT], Univ Nac de la Plata [AR], Conselho Nac de Investigacoes Cientificas e Tecn Conicet [AR], Abraham Analia [AR], Gomez-Zavaglia Andrea [AR], Garrote Graciela [AR], Brandi Lucia [AR], de Antoni Graciela [AR], Martins Ribeiro da Silva Lourenco Rui Fausto [PT]
Neves Jose [PT], Teixeira Luis [PT], Bhatia Surendra [IN], Ermrich Martin [DE]	Sapac Agro Sa [PT], Neves Jose [PT], Teixeira Luis [PT], Bhatia Surendra [IN], Ermrich Martin [DE]
Colombo Armando Walter [DE], Mendes Joao Marco [PT]	Schneider Electric Automation Gmbh [DE], Colombo Armando Walter [DE], Mendes Joao Marco [PT]
Costa Filipe Fernando Vila Nova de Azevedo [PT]	Irmaos Vila Nova S A [PT], Costa Filipe Fernando Vila Nova de Azevedo [PT]
Johnson Richard Ray [CA], Metello Luis Francisco de Oliveira Marques [PT], Cunha Lidia Alexandra dos Santos [PT], Sossi Vesna [CA]	Isopor Isotopos para Diagnostico e Terapeutica S A [PT], Best Cyclotron System Inc [US], Johnson Richard Ray [CA], Metello Luis Francisco de Oliveira Marques [PT], Cunha Lidia Alexandra dos Santos [PT], Sossi Vesna [CA]
Macedo Tavares Carlos Jose [PT], da Silva Pina Fernando Jorge [PT]	Univ do Minho [PT], Univ Nova de Lisboa [PT], Macedo Tavares Carlos Jose [PT], da Silva Pina Fernando Jorge [PT]
Pascoal Neto Carlos [PT], da Rocha Freire Barros Carmen Sofia [PT], de Matos Fernandes Susana Cristina [PT]	Univ Aveiro [PT], Pascoal Neto Carlos [PT], da Rocha Freire Barros Carmen Sofia [PT], de Matos Fernandes Susana Cristina [PT]
Ferreira Milheiro Nunes Fernando Herminio [PT], Ramos Novo Amorim de Barros Ana Isabel [PT], Moreira Meneses Fraga Sara Margarida [PT]	Univ Tras os Montes e Alto Douro [PT], Ferreira Milheiro Nunes Fernando Herminio [PT], Ramos Novo Amorim de Barros Ana Isabel [PT], Moreira Meneses Fraga Sara Margarida [PT]
Tavares Manuel Barroso [PT]	Tavares Manuel Barroso [PT]
Silva Patricio Manuel Vieira Araujo Soares da [PT]	Bial Portela & Ca Sa [PT], Silva Patricio Manuel Vieira Araujo Soares da [PT]
Jacquier Herve Francois Serge [PT], Vermet Christian Francois Yves	Killine Optical Ltd Jacquier Herve Francois Serge [PT], Vermet Christian Francois Yves
Meyer Max [SG], Althaus Walter [SG], Effendi Ferry [SG], Juliadi Nugroho Budi [SG], Almeida Romao [PT], Laurens Jean Marie [CH], Burtet Pascal [CH],	VSL Int Ag [CH], Meyer Max [SG], Althaus Walter [SG], Effendi Ferry [SG], Juliadi Nugroho Budi [SG], Almeida Romao [PT], Laurens Jean Marie [CH], Burtet Pascal [CH]
Pinto Dos Santos Carlos Alberto [PT]	Bsr Compacto Gestao de Patentes e Design de Equipamentos Sanitarios Unipessoal Lda [PT], Pinto dos Santos Carlos Alberto [PT]

**Table 3.10 USPO Published Patent Applications by Portuguese Applicants (2011)**

Title	Pub. Number	Pub. Date
Administration regime for nitrocatechols	US2011301204 (A1)	2011-12-08
Jet deflection device	US2011290718 (A1)	2011-12-01
Use of compounds in the treatment of tau-induced cytotoxicities	US2011294741 (A1)	2011-12-01
Semiconductor device and method of manufacturing the same	US2011253997 (A1)	2011-10-20
Herbicidal treatment compositions and methods for improved control of undesired vegetation in rice crops	US2011237437 (A1)	2011-09-29
Process	US2011237803 (A1)	2011-09-29
Synthetic closure with multiple internal layers, each layer having a variable cross section (vcs) along the closure length,	US2011226722 (A1)	2011-09-22
Adjustment system for connections between metal structures	US2011222957 (A1)	2011-09-15
Article of furniture and fitting for an article of furniture	US2011221252 (A1)	2011-09-15
Process for covering rubber particles with a polymeric film and covered rubber granulates obtained by this process,	US2011189485 (A1)	2011-08-04
Protein complexes and screening methods	US2011183425 (A1)	2011-07-28
Catalytic process for asymmetric hydrogenation	US2011166360 (A1)	2011-07-07
Methods and systems for detection of retinal changes	US2011160562 (A1)	2011-06-30
Bath tub with feet	USD640354 (S1)	2011-06-21
Sealing stopper for manual removal and reinsertion	US2011108512 (A1)	2011-05-12
Crystal forms of 5-[3-(2,5-dichloro-4, 6-dimethyl-1-oxy-pyridine-3-yl)][1,2,4] oxadiazol-5-yl]-3-nitrobenzene-1,2-diol	US2011112301 (A1)	2011-05-12
Process	US2011112303 (A1)	2011-05-12
Device for the display of a tagging item, such as in particular an advertising leaflet, on a shelf of a selling surface	US2011108691 (A1)	2011-05-12
Method of adapting video images to small screen sizes	US2011096228 (A1)	2011-04-28
Polypeptide extracted from plants of the genus lupinus or produced in recombinant form, nucleotide sequence encoding it and its use in animal nutrition, as a plant growth promoter and in the fight against pathogenic fungi	US2011088128 (A1)	2011-04-14
Methods of distinguishing between glutamine formed by cataplerosis or proteolysis	US2011079093 (A1)	2011-04-07
Compounds for treating pain	US2011082087 (A1)	2011-04-07
Use of 5h-dibenz / b, f/ azepine-5-carboxamide derivatives for treating fibromyalgia	US2011073510 (A1)	2011-03-31
Arm for spectacles and associated spectacles	US2011066646 (A1)	2011-03-17
Telescopic tower assembly and method	US2011065451 (A1)	2011-03-17
Rotational sanitary unit	US2011038955 (A1)	2011-02-17
Systems and methods for inputting transient data into a persistent world	US2011016148 (A1)	2011-01-20

Source: espacenet (EPO), search on WO as the publication number AND 2011 as the publication date AND [PT] as the applicant



Inventor(s)	Applicant(s)
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Garcia da Fonseca Joao [PT], Esteves Nuno Alexandre Reis [PT], Burger Robert [DE]	Biosurfit S A [PT]
Dos Santos Alexandra Maria Barros [PT], Rodrigues Catia Santana Reverendo [PT], Roca Christophe Francois Aime [PT], Vieira Helena Margarida Moreira de Oliveira [PT], de Sousa Jose Manuel Bernardo [PT], Cerejo Marta Isabel Heitor [PT], Mendes da Silva Calado Patricia Ramalhete [PT], Pinheiro Ricardo Filipe Antunes [PT], Chatterjee Sukalyan [PT], Ribeiro Marta Maria Batista [PT], Castanho Miguel Augusto Rico Botas [PT], Rodriguez Eduard Bardaji [ES], Corominas Montserrat Heras [ES], Tavares Isaura Ferreira [PT], Pinto Marta Sofia Carvalho Teixeira [PT]	Bioalvo Servicos Investigacao E Desenvolvimento em Biotecnologia S A [PT]
Park Sang Hee [KR], Hwang Chi Sun [KR], Byun Chun Won [KR], Fortunato Elvira M C [PT], Martins Rodrigo F P [PT], Barros Ana R X [PT], Correia Nuno F O [PT], Barquinha Pedro M C [PT], Figueiredo Vitor M L [PT]	Faculty of Science and Technology New University of Lisbon [PT], Korea Electronics Telecomm [Kr]
Cheung Tak Wai [US], Camparini Sergio [US], Majure Wallace Keith [US], Stewart Kevin Wayne [US], Alcaraz Sandra [US], Grasso Charles Paul [US]	Gowan Com Internac e Servicos L [PT]
Beliaev Alexander [PT], Learmonth David Alexander [PT]	Bial Portela & Ca Sa [PT]
Romao de Sousa Jose [PT]	Epoli Espumas de Polietileno Sa [PT]
Marques Lito Velez Grilo Vasco Maria [PT]	Steelroot Portugal Lda [PT]
Fischer Matthias [SK]	Vel Vega Design e Tecnologia Ind Unip Lda [PT]
Moura Bordado Joao Carlos [PT], Afonso Veloso Isabel Rute [PT], Valente Mendes Raposeiro Ines [PT], Vilela de Mota Helena Isabel [PT], Fonseca Amaro Mariana [PT], Guilherme Silva Candeias Marta Sofia [PT]	Inst Superior Tecnico [PT]
Valente Andre Xavier de Carvalho Negraeo [PT], Gao Yuan [US], Buck Gregory A [US], Roberts Seth [US]	Biocant Associacao de Transferencia de Techno-logia [PT], Univ Virginia Commonwealth [US]
Beliaev Alexander [PT], Learmonth David Alexander [PT], Almerna Perea Juan Jose [DE], Geib Gerhard [DE], Hitzel Patrick [DE], Kadyrov Renat [DE], Voigtlaender David [DE]	Bial Portela & Ca Sa [PT],
de Oliveira E Ramos Joao Diogo [PT], Vilhena Nelson Augusto de Sousa [PT], Costa Santos Frederico Teles de Campos [PT], da Silva Pinto Joao Paulo [PT]	Critical Health SA
Goncalves Esmeralda [PT], Oliveira Joaquim [PT]	Metalurgica Recor Sa [PT]
Cabral Miguel Freire de Albuquerque Ferreira [PT], Roseira Isabel Maria Ribeiro de Almeida de Lima [PT], Lopes Paulo Dinis Vale [PT], Duarte Pedro Nuno Esteves [PT]	Amorim & Irmaos S A [PT]
Learmonth David Alexander [PT], Lorimer Keith [US], Meyer Kevin Wayne [US], Eszenyi Tibor [HU], Kovach Almosne [HU]	Bial Portela & Ca Sa [PT]
Learmonth David Alexander [PT], Beliaev Alexander [PT], Li Wenge [US]	Bial Portela & Ca Sa [PT]
Alves Manuel [PT], Dinis Pedro [PT], Caseiro Rosa [PT]	Joalpe Ind de Expositores Sa [PT]
Deigmoeller Joerg [DE], Stoll Gerhard [DE], Neuschmied Helmut [AT], Kriechbaum Andreas [AT], Dos Santos Cardoso Jose Bernardo [PT], Oliveira de Carvalho Fausto Jose [PT], Salgado de Alem Roger [PT], Huet Benoit [FR], Marialdo Bernard [FR], Trichet Remi [FR]	Inst Rundfunktechnik Gmbh [DE], Joanneum Res Forschungsgesell MbH Inst of Info Syst [AT], Portugal Telecom Inovacao Sa [PT]
De Seixas Boavida Ferreira Ricardo Manuel [PT], Valadas da Silva Monteiro Sara Alexandra [PT], Nascimento Teixeira Artur Ricardo [PT], Borges Loureiro Virgilio [PT]	Inst Superior de Agronomia [PT]
Jones John Griffith [PT]	Biocant [PT]
Ribeiro Marta Maria Batista [PT], Castanho Miguel Augusto Rico Botas [PT], Roca Christophe Francois Aime [PT], Moreira de Oliveira Vieira Helena Margarida [PT], Bernardo de Sousa Jose Manuel [PT], Cerejo Marta Isabel Heitor [PT], Mendes da Silva Calado Patricia Ramalhete [PT], Chatterjee Sukalyan [PT], Rodriguez Eduard Bardaji [ES], Corominas Montserrat Heras [ES], Tavares Isaura Ferreira [PT], Pinto Marta Sofia Carvalho Teixeira [PT], Correia Ana Dulce Ascensao [PT], Simoes de Mel Manuel Nuno de Sousa [PT]	Edificio Icat [PT]
Cassina Virginio [IT]	Daviplast Servicos de Consultoria Sociedade Unipessoal Lda [PT]
Danado Jose Carlos dos Santos [Pt], Varzea Tavares Afonso Miguel Romeiras Lourenco [Pt], Silva Frazao Joao Pedro Gomes da [Pt], Franco Ivan de Almeida Soares [Pt]	Ydreams Informatica S A Edificio Ydreams [PT]
Danado Jose Carlos dos Santos [Pt], Varzea Tavares Afonso Miguel Romeiras Lourenco [Pt], Silva Frazao Joao Pedro Gomes Da [Pt], Soares Franco Ivan de Almeida [Pt]	Ydreams Informatica S A [PT]
Rodrigues Sandra S [Pt], Seixas Joao D [Pt], Guerreiro Bruno [Pt], Pereira Nuno Miguel Penacho [Pt], Romao Carlos C [Pt], Haas Werner E [Pt], Goncalves Isabel Maria de Sousa [Pt]	Alfama Investigacao e Desenvolvimento de Produtos Farmaceuticos Lda [PT]
Lopes Goncalo Cardoso [PT], da Silva Frazao Joao Pedro Gomes [PT], de Almeida Andre Rui Soares Pereira [PT], Cardoso Nuno Ricardo Sequeira [PT], de Almada Antao Bastos Carrico Vaz [PT], Franco Ivan de Almeida Soares [PT]	Ydreams Informatica S A [PT]





## 4. UTEN: A Knowledge Network

“The UTEN initiative has been greatly supported by its stakeholders, namely technology transfer officers, faculty, researchers and entrepreneurs. Furthermore, in the course of the independent assessment of Portuguese collaboration with U.S. universities commissioned by the Portuguese Government, the Academy of Finland reviewed UTEN positively, clearly recommending its renewal and expansion.”

Leonor Parreira  
Secretary of State for Science  
Portugal



## 4.1 Portugal's Institutional Partners

UTEN is administered through a Joint Operating Board that is chaired by the President of FCT and includes CRUP's and INPI's Presidents and UTEN Directors (Portugal and Austin). Robert Peterson, as Principal Investigator and Associate Vice President for Research, The University of Texas at Austin, oversees the program and Marco Bravo is acting Director in Austin. The management team is led by the Scientific Director, José Manuel Mendonça, President of Inesc Porto and full professor at the School of Engineering of University of Porto, who is assisted by Fátima Ramalho and Sónia Pinto and by the executive director Maria Oliveira, as well as by Joana Ferreira, the Communications Coordinator. Vasco Varela is the focal point at FCT that closely accompanies the program. UTEN's current management team works closely with the managing boards of the international partnership programs both in Portugal and abroad. The governance model for the next phase of the this initiative is being discussed with FCT and the Portuguese Government.

### *FCT – Foundation for Science and Technology.*

The main sponsor of the University Technology Enterprise Network is the Fundação para a Ciência e a Tecnologia (FCT). FCT began operations in August 1997 following Junta Nacional de Investigação Científica e Tecnológica (JNICT). FCT's mission is to:

1. Continuously promote the advancement of scientific and technological knowledge in Portugal;
2. Explore opportunities that become available in any scientific or technological domain to attain the highest international standards in the creation of knowledge
3. Stimulate knowledge diffusion and contributions to improving education, health, the environment, quality of life, and well being of the general public.

FCT mainly accomplishes its mission through the competitive selection and funding of proposals, and also through cooperative agreements and other forms of support in partnership with universities and other public or private institutions in Portugal and abroad. The results of the activities of FCT come from the contributions of individuals, research groups, and institutions who have been awarded FCT financing. FCT promotes, finances, and evaluates science and technology institutions, programs, projects; establishes qualifications of human resources; promotes and supports infrastructure for scientific research and technological development, and promotes the diffusion of scientific and technological culture and knowledge (especially when relevant for educational purposes) in close collaboration with the agency Ciência Viva. FCT also stimulates the update, interconnection, and reinforcement and availability of science and technology information sources.

### *CRUP: Council of Rectors of the Portuguese Universities*

CRUP is composed of the rectors of the Portuguese Public Universities plus the Catholic University of Portugal. The competences of CRUP are to assure the coordination and representation of the universities that compose the conference, securing their autonomy; to cooperate in the definition of the national policy of education, science and culture; to give advice regarding legislative projects concerning public university education; budgetary questions concerning public university education; the creation, integration, modification or suspension of public university institutions; to contribute to the development of education, research and culture, and to the promotion of the functions of the universities and their agents; also to improve the relations with foreign institutions of similar character.

### *INPI – Portuguese Institute of Industrial Property*

The Portuguese Institute of Industrial Property (INPI) is a public institution operating under the aegis of the Portuguese Ministry of Justice. INPI's mission is to ensure the protection and promotion of Industrial Property Rights on both a national and international level. It is INPI's aim to provide support to IP System end users, by implementing strategies which will enable them to effectively explore their intangible assets.

## 4.2 Participating Portuguese Partners

UTEN is an informal network of around 40 institutions Portuguese universities and their technology transfer offices, research centers, and incubators involved in S&T commercialization, as well as select S&T parks with relevant university research activities. UTEN was launched by the Portuguese Science and Technology Foundation (FCT)—with the support of the Portuguese Institute of Industrial Property (INPI) working with the IC<sup>2</sup> Institute at The University of Texas at Austin.

UTEN strengthens international dialogue and provides new networking opportunities for Portuguese technology transfer and commercialization offices and technology based companies and start-ups in close cooperation with the IC<sup>2</sup> Institute, The University of Texas at Austin, among other leading institutions worldwide. The involvement of international experts serves as a catalyst as they vigorously share knowledge and act as a sounding board for Portuguese participants.

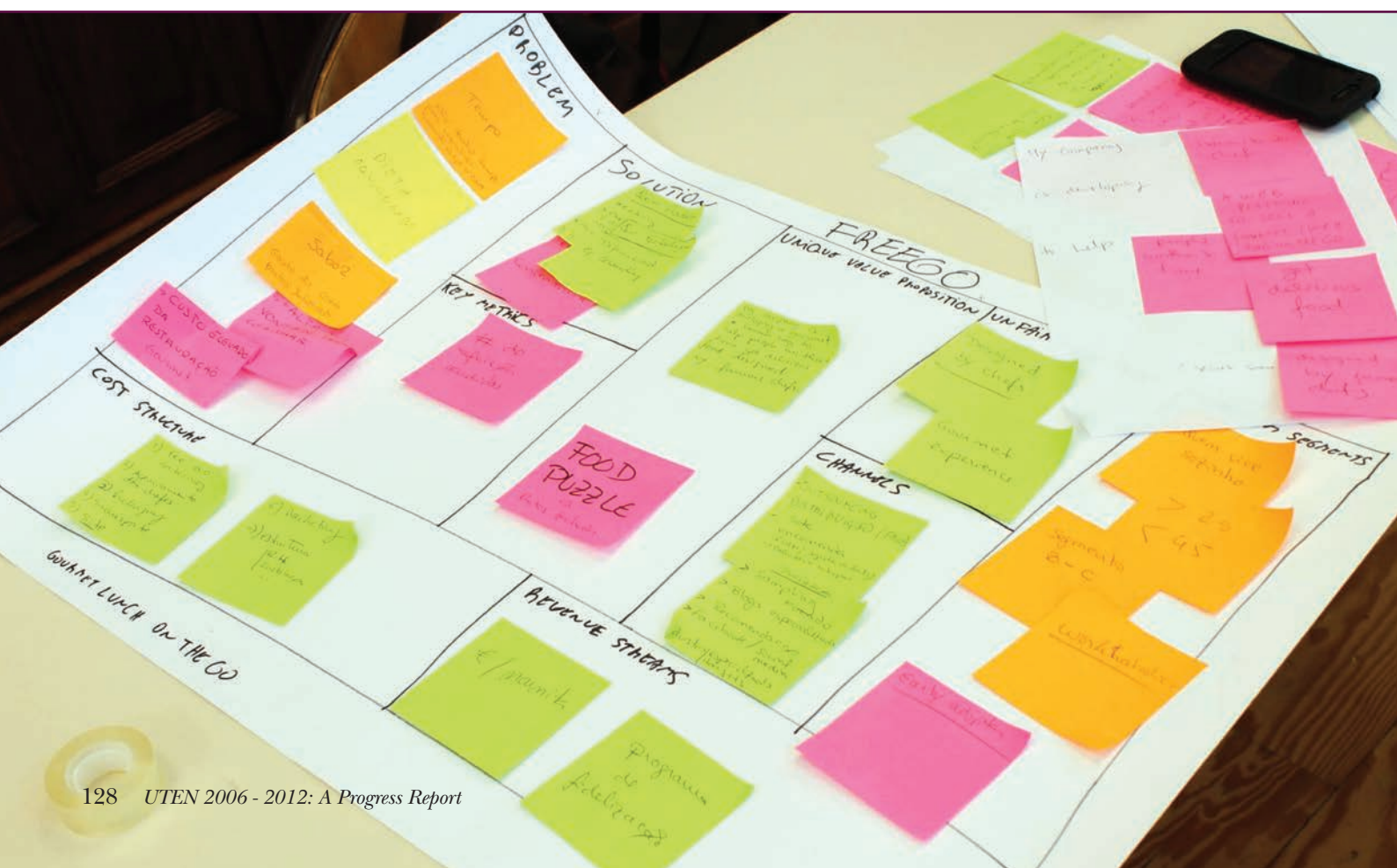
Since its beginning, UTEN has moved from theory to reality and has been working closely with university-based institutions since its inception, namely talented technology transfer offices across the country. Tables 4.1, 4.2, and 4.3 show these entities in list form. Following these tables are brief descriptions of some of these organizations.

This is the core of the University Technology Enterprise Network!



**Table 4.1 Technology Transfer Offices**

Institution	Technology Transfer Offices	UTEN Focal Points
NOVA University of Lisbon	Technology Transfer Office of FCT/UNL	Zulema Lopes Pereira Ana Sofia Esteves
Polytechnic Institute of Porto	Knowledge and Technology Transfer Office	Carlos Ramos Rafael Pedrosa
Technical University of Lisbon	SpinLogic, Católica Porto   Knowledge and Technology Transfer Unit	Eduardo Luís Cardoso
Technical University of Lisbon	OTIC UTL	Eduarda Camilo
	TT@IST, IST's Technology Transfer Office	Luís Caldas de Oliveira
University of Algarve	CRIA, Division of Entrepreneurship & Technology Transfer	Hugo Barros Sofia Vairinho
University of Aveiro	UATEC, University of Aveiro Technology Transfer Unit	José Paulo Rainho
University of Beira Interior	ICI, Research Coordinator Institute   GAPPI - Office for the Promotion of R&D	Ana Paula Duarte Conceição Camisão Dina Pereira Pedro Serrão
University of Coimbra	DITS, University of Coimbra Technology Transfer Unit	Jorge Figueira João Nuno Simões
University of Évora	Projects and Information Office   Science and Cooperation Services	Carlos Braumann Manuel Cancela d'Abreu
University of Lisbon	UL INOVAR	Maria Teresa Salter Cid
University of Madeira	OTIC-TeCMU   Technology & Knowledge Transfer Office, U Madeira	Carlos Lencastre
	GAPI Madeira at Madeira Tecnopólo	Pedro Mota
University of Minho	TecMinho	Marta Catarino Pedro Silva
University of Porto	UITT, Innovation and Technology Transfer Unit of INESC Porto	Alexandra Xavier
	UPIN, University of Porto Innovation	Maria Oliveira
University of Trás-os-Montes e Alto Douro (UTAD)	GAPI-OTIC, Technology Transfer Office at UTAD	António Miguel Bacelar Carla Mascarenhas





**Table 4.2 Promotion of Entrepreneurship**

Institution	UTEN Focal Points
AvePark, Science and Technology Park	Carlos Remísio
CEIM, Centro de Empresas e Inovação da Madeira   BIC MADEIRA - Madeira Business Innovation Centre	Patrícia Dantas de Caires
INOVISA	Luís Mira da Silva
IPN – Instituto Pedro Nunes	Carlos Cerqueira José Ricardo Aguilar Paulo Santos
ISCTE - Lisbon University Institute   Audax   BGI VC	José Paulo Esperança Gonçalo Amorim
Madan Park	José Damião Alcino Pascoal
NOVA University of Lisbon   NOVA University Entrepreneurship Office	Joana Mendonça
Parkurbis - Science and Technology Park of Covilhã	Pedro Farromba Daniela Marta
Sines Tecnopolo	Mónica Brito
Spinlogic, Católica Porto   Incubator	Eduardo Luís Cardoso
Taguspark, S.A.	Amaro Teixeira
University of Aveiro	
UATEC, University of Aveiro Technology Transfer Unit	José Paulo Rainho
IEUA, University of Aveiro Business Incubator	Celso Guedes de Carvalho
UPTEC, Science and Technology Park of University of Porto	Clara Gonçalves

**Table 4.3 Research Institutions**

Institution	UTEN Focal Points
CEDOC - Chronic Diseases Research Center	Marta Carapuço Joaquim Teixeira
IGC - Instituto Gulbenkian de Ciência	Joaquim Teixeira
IMM - Instituto de Medicina Molecular	Maria do Carmo Fonseca Filipa Nunes
IN+ - Center of Innovation, Technology & Policy Research	Paulo Ferrão
ITQB - Instituto de Tecnologia Química e Biológica	Francisco Pereira do Valle



## TECHNOLOGY TRANSFER OFFICES

### NOVA University of Lisbon

Technology Transfer Office of FCT/UNL

<http://sites.fct.unl.pt/tto/>

Faculdade de Ciências e Tecnologia (Faculty of Science and Technology; FCT) is one of the nine academic units of Universidade Nova de Lisboa (UNL). The FCT/UNL campus is located in Monte de Caparica and covers approximately 30 hectares, with additional capacity expansion to 60 hectares.

Founded in 1977, FCT/UNL is one of the most prestigious Portuguese public schools of science and engineering today, with a total enrollment of about 7,895 students, of which nearly 1,584 are postgraduate students (MSc and PhD).

Since its foundation, FCT/UNL has given priority to the promotion of research in its areas of activity. Today FCT/UNL hosts 16 research centers acknowledged by Fundação para a Ciência e a Tecnologia (of which three are rated *excellent* and six *very good*), as well as two Poles of research centers (both rated *very good*).

FCT/UNL has 552 academic and research staff (491 PhD holders) and 184 administrative staff. It has 14 departments/sectors and eight support services.

The Technology Transfer Office (TTO) was created in January 2010 with the goal of turning ideas into assets through the protection and valorization of knowledge generated at FCT/UNL.

The main function of the TTO is to provide services that help build an ecosystem based on synergies between the Caparica Campus and Industry to disseminate, promote and create value through Intellectual Property Rights; and to promote and facilitate the knowledge transfer process for the benefit of the FCT/UNL community and industry, while protecting ideas and technologies.

FCT/UNL has established leading national and international partnerships that foster an entrepreneurial culture that allows the TTO to support faculty, researchers, students and staff in the development and commercialization of technologies.





## Polytechnic Institute of Porto

Knowledge and Technology Transfer Office

[www.ipp.pt](http://www.ipp.pt)

Leading five distinct scientific areas and fully complying with the European Space for Higher Education and the Bologna Declaration, the Polytechnic Institute of Porto integrates more than 50 first- and second-cycle degree courses. Characterized by a teaching team of more than 1,500 highly skilled and trained scholars and researchers, it aggregates seven distinct organic units and integrates more than 20 active research centers, with around 19,000 students, and more than 360 non-teaching collaborators.

Polytechnic Institute of Porto is a role model of success and ambition. Rated in the top five of the national access ranking list, the Polytechnic Institute of Porto was, in 2011, the national Polytechnic Institute that received the largest number of new students.

## Portuguese Catholic University

SpinLogic – Católica Porto | Knowledge and Technology Transfer Unit

[www.porto.ucp.pt/spinlogic](http://www.porto.ucp.pt/spinlogic)

The Knowledge and Technology Transfer activities at Católica Porto are a part of Spinlogic, a university-wide entrepreneurship strategy at the Portuguese Catholic University.

Based on the entrepreneurial culture associated to the University and on its experience in the promotion of businesses over the last 25 years, starting in the area of Biotechnology and expanding to the area of Arts, the Católica Porto has structured the Spinlogic initiative, asserting itself as an Entrepreneurial University. The initiative integrates different processes of technology transfer, including information and training for the internal community – students, teachers, researchers, staff and, particularly, for the Research Centers – focusing on the economical valorization of knowledge and transferring knowledge-based results to society, to can create individual and collective value.

The Spinlogic Unit ensures patent portfolio management and acts as a liaison with external entities to identify opportunities to apply knowledge and foster investment.

As an integrated strategy, the Spinlogic program promotes innovation and entrepreneurship amongst the internal community and provides incubator management, and knowledge and technology transfer.





OFICINA DE TRANSFERÊNCIA  
DE TECNOLOGIA E DE CONHECIMENTO  
UTL | Universidade Técnica de Lisboa



## Technical University of Lisbon

OTIC|UTL  
[www.otic.utl.pt](http://www.otic.utl.pt)

OTIC|UTL's mission is to provide protection and industry transfer for the knowledge and technology produced by UTL schools. We provide services to the various schools and research centers and develop an internal network for effective IP protection and development.

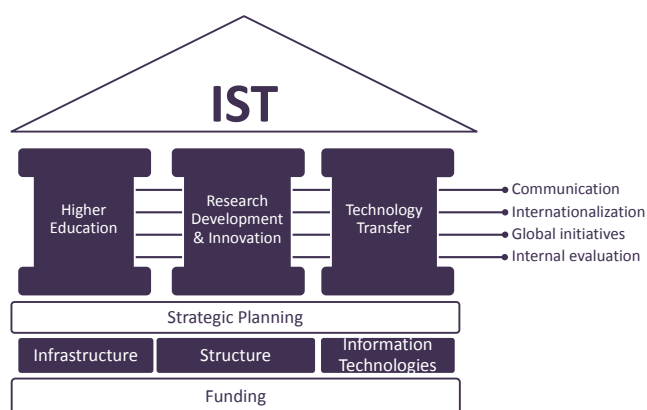
We also disseminate information about the importance of IP protection and entrepreneurial spirit, through the organization of workshops, seminars, and courses directed to researchers and students, and provide an IP protection and management service and assistance in business plan development.

OTIC|UTL works with the schools of the university that don't have their own tech transfer and IP structures, ensures that their R&D is protected and valued, and promotes synergies and collaborations between the several structures, like incubators or specialized TTOs.

## Technical University of Lisbon

TT@IST – IST's Technology Transfer Office  
<http://tt.ist.utl.pt/en/>

Technology transfer for the benefit of society is one of the three strategic pillars of IST, together with education and research.



In this regard, the President of IST has created TT@IST - IST's Technology Transfer Office to focus on entrepreneurship, corporate relations and all matters related to technology transfer.

IST's Technology Transfer Office supports the Executive Board of the School in its links to society, through contractualization, protection, management, and economic valorization of IST knowledge and intellectual property.

It is also the focal point to establish dynamic company relations, student career development, entrepreneurial initiatives, and industry relations.

The TT@IST is composed of two departments: the Intellectual Property Department and the Business Partnership Department.



## University of Algarve CRIA

Division of Entrepreneurship and Technology Transfer  
[www.ualg.pt](http://www.ualg.pt), [www.cria.pt](http://www.cria.pt), [www.facebook.com/criaualg](http://www.facebook.com/criaualg)

CRIA is the Division of Entrepreneurship and Technology Transfer of the University of Algarve, to promote industry relations, to increase technology and knowledge transfer, to support the establishment of new firms, to facilitate industrial property rights mechanisms, and to develop technological infrastructures that enhance specific research fields in the Algarve. CRIA focuses on intervention areas that include: Intellectual Property & Licensing Support, Commercialization & Technology Transfer, Entrepreneurship & Business Development, and European Projects & Studies.

With a small team of variable size according with the developing projects, and connecting staff from academic and business environments, the Division of Entrepreneurship and Technology Transfer addresses three functional areas under the supervision of the Executive Coordinator and the Rector, and three transversal/operative areas, namely quality assurance, communication, and administrative/financial.

Functional areas include:

*1. Intellectual Property and Licensing Support:* Information, monitoring, and clearing of all procedures related to trademarks (brands, logos, etc.) and providing the follow-up of patent registration and licensing procedures. Also, this area helps develop university/industry relations by developing consortium projects, creating collaborative platforms in regional industry sectors, and promoting scientific research with transfer potential for stakeholders inside and outside UAlg.

*2. Entrepreneurship and Business Development:* CRIA stimulates entrepreneurship and supports knowledge-based ideas generated within the university and in the region to develop into high potential spin-offs and start-ups, while we support established companies to develop innovation processes, promote wealth, and provide quality employment for regional development and competitiveness.

*3. European Projects and Studies:* All the activities undertaken in the referred areas have been complemented by participation in research, consultancy, and European projects.



## University of Aveiro

UATEC - University of Aveiro Technology Transfer Unit  
[www.ua.pt/uatec](http://www.ua.pt/uatec)

Created in 1973, the University of Aveiro quickly became one of the most dynamic and innovative universities in Portugal. It is attended by more than 14,500 students, with 1,000 highly qualified professors and more than 100 researchers. The university's mission is to create knowledge and make it accessible to the community through teaching, research, and cooperation. UA's research and development creates innovative products and solutions, which contribute to the public good as they advance science and technology. National and international partnerships with companies and other organizations increase opportunities for collaborative research and provision of services.

Created in 2006, UATEC (University of Aveiro Technology Transfer Unit), helps meet these goals, particularly partnership opportunities creation.

Under the supervision of the Vice-Rector for University-Society Cooperation, Innovation, Technology Transfer, and Post-Secondary Training, UATEC's mission is to support the university to be a national center of excellence in knowledge creation and dissemination. UATEC promotes UA technologies in the marketplace; manages intellectual property; identifies industry needs and supports R&D preparation and consultancy projects; and promotes entrepreneurship and supports technology-based company creation. Since 2006, UATEC has helped UA achieve the following results:

- Intellectual Property (IP)
  - » 143 National patent applications filed
  - » 71 International patent applications filed
  - » 217 Trademark applications filed
- IP Valuation:
  - » 22 technologies licensed to companies
  - » Company creation:
    - » 15 Spin-offs created
    - » 35 Start-ups created





## University of Beira Interior

ICI - Research Coordinator Institute

<http://ici.ubi.pt/?section=ICI&lang=PT>

GAPPI - Office for the Promotion of Research and Projects

<http://ici.ubi.pt/?section=GAPPI&lang=PT>

The main activities of the ICI - Research Coordinator Institute of the University of Beira Interior, through GAPPI - Office for the Promotion of Research and Projects, are to:

- Promote and establish partnerships between UBI and firms, in terms of R&D projects, technology transfer and contracts
- Spur the creation of academic start-ups and spin-offs through the organization of venture competitions, industry partner events, and financial networks to support business plans and proofs of concept
- Disclose inventions and help scientists to apply for patents and other IP rights
- Support and consult the economic valorization of academic patents.

## University of Coimbra

DITS - University of Coimbra Technology Transfer Unit

[www.uc.pt/dits](http://www.uc.pt/dits)

The University of Coimbra Technology Transfer Unit, (DITS Divisão de Inovação e Transferências do Saber) is a specialized service provided by the university to advance knowledge transfer and promote win-win collaborations between academia, society, and industry. Pursuing its mission to “support the definition and promotion of the university’s knowledge economy policy, as well as entrepreneurship, integrated in a regional innovation ecosystem, and contribute to its strategic development,” the main activities of this unit are to:

- Search, identify, and disseminate development and innovation projects financial opportunities
- Manage the university’s intellectual property portfolio
- Manage R&D and innovation partnerships and give support to spin-off creation
- Identify and evaluate the commercial potential of R&D project results
- Stimulate and promote collaborations between academia and industry
- Inform about scholarships, courses, programs and research projects offers
- Support and manage current knowledge transfer partnerships
- Promote innovation and entrepreneurship.



## University of Évora

Projects and Information Office | Science and Cooperation Services  
<http://www.uevora.pt/>

The University of Évora is organized in four Schools: Arts, Sciences & Technology, Social Sciences, and Nursing; and offers 33 undergraduate and 41 postgraduate degrees.

Research and Development (R&D) covers several scientific areas through a network of 14 research units, all of them submitted to international evaluation under the coordination of the Institute for Research and Advanced Studies. R&D aims are to enhance knowledge transfer to society at large, and thus contribute to its development and sustainability. To meet this end, research activities are grounded on both a multi-disciplinary and inter-departmental basis and on specific programs and projects, taking advantage of the synergies generated by the interaction among different areas.

The main R&D areas are: Agronomy & Biodiversity; Geophysics, Environment & Landscaping; Materials & Surface Science; Economics & Business Studies; Computer Sciences & Software Interoperability; Social & Political Sciences, History, History of Art, Science & Cultures; Applied Mathematics; Education; Linguistics & Literature; and Elderly Healthcare.

Most of the 150 running R&D projects are developed through national and international partnerships, funded by the FP7, the European Social Fund and the National Science Foundation as well as by private sponsorship.

Furthermore, the University of Évora established two Chairs in areas of excellence: Biodiversity and Renewable Energies, which are sponsored by private capital holders.



## University of Lisbon

UL INOVAR  
[www.ul.pt](http://www.ul.pt)

UL Inovar is the Knowledge Transfer Office (KTO) of Universidade de Lisboa. Created in 2009, it is located at the main campus and operates within the Shared Services of UL (Serviços Partilhados - SPUL), as a part of the Research Support Cabinet (Gabinete de Apoio à Investigação). It is overseen by a Steering Committee formed of representatives from its several units, presided by a Vice Rector of the University.

UL Inovar mission is to “Add value to the research results and processes of UL, through the co-promotion and management of structured interactions between the academic community and the social and economic stakeholders.” It serves the community of UL to:

- Liaise with industry and other entities
- Strategically manage Knowledge Transfer (KT) and Intellectual Property (IP) portfolios
- Negotiate IP rights on research results
- Assist in the protection of IP
- Draft or review IP clauses in contracts
- Entrepreneurship support, business modeling and business plans
- Support academic spin-offs
- Provide training and raise awareness in entrepreneurship, KT and IP.

In its short time of existence UL Inovar has tripled the number of patent applications owned by UL, concluded five license deals and a number of research development contracts with industry, organized several workshops and events, including a summer school on KT and two entrepreneurship courses (one together with Instituto Politécnico de Lisboa), and supported several spin-off projects, including two teams that won national entrepreneurship competitions.





## University of Madeira

OTIC-TeCMU | Technology & Knowledge Transfer Office, U Madeira  
<http://gpc.uma.pt>

The mission of the University of Madeira is to increment the interaction between scientific and technologic units and business activity, promoting processes for technology search, suitable to the needs of regional markets, thereby streamlining procedures for the promotion of technology based start-ups and spin outs, as well as initiatives to diffuse intellectual property. Main objectives:

- Survey and technology identification within Madeira University
- Detect environmental needs and business initiatives to be addressed through technological innovations at U Madeira
- Contribute to the growth of partnerships and cooperation between UMA and business initiatives as it relates to the design, monitoring and/or development of joint Research & Development plus Technology & Innovation.
- Make the university more cognizant of regional business reality, to provide a better regional market performance through adequate training, including training with a lifelong learning perspective
- Protect and manage intellectual property (IP) resulting from the R&D, whether developed by UMA and/or in cooperation partnerships with laboratories or regional/national/international research centers
- Promote and support the creation of innovative technology-based companies
- Draft technology transfer contracts
- Prepare confidentiality agreements
- Establish protocol with the National Industrial Property Institute (INPI)
- Support the commercialization of research results.

## University of Madeira

GAPI Madeira at Madeira Tecnopólo  
<http://www.ceim.pt>

In recent years, GAPI Madeira has developed strategies for promoting applications for patent protection. These are supported by industrial property (IP) policies, marketing materials and activities, staff, and procedures dedicated to achieving that goal.

A comprehensive strategy for marketing activities has been developed which includes an IP tool kit, IP brochures, workshops and seminars, website development, questionnaires, and structured interviews.

The approach to drafting IP policy and the procedures to identify and select patentable inventions has been the GAPI's primary target.

GAPI Madeira actively interfaces between inventors, the university, and entrepreneurs, to help these parties align their efforts to bring new technology solutions to the market.





## University of Minho

TecMinho  
[www.tecminho.uminho.pt](http://www.tecminho.uminho.pt)

TecMinho is the interface of University of Minho (UMinho) responsible to manage university-developed intellectual property and support knowledge transfer through licensing, strategic industry partnering, and establishing knowledge-intensive spin-off companies.

TecMinho has been active in this field for more than 20 years, and has met extensive success in patent portfolio management, technology licensing, and in engaging a young and vibrant entrepreneurship community. As the knowledge transfer office of University of Minho, TecMinho's multidisciplinary team is particularly focused to:

- Encourage and support researchers to effectively transfer their research results to the market
- Maximize the valorization of UMinho's IP portfolio
- Promote and participate in national and transnational projects to develop innovative methodologies and strategies in innovation and technology transfer
- Offer solutions and consultancy services for companies' R&D, innovation and IP needs through a unique access point to UMinho's universe of knowledge
- Connect entrepreneurs, technologies, and market opportunities to develop new successful ventures.

TecMinho networks extensively with national, European and international partners to access global resources, knowledge and opportunities to support local ventures and commercially viable research results in fulfilling their market potential.

Supporting researchers to exploit R&D results and helping companies articulate their technology needs, TecMinho promotes the establishment of successful strategic partnerships.



## University of Porto

UITT - Innovation and Technology Transfer Unit of INESC Porto  
<http://www2.inescporto.pt/uitt>

The Innovation and Technology Transfer Unit (UITT) was created in 2007 to strengthen INESC Porto's mission to transfer R&D results directly to the society, originating economic and social value.

UITT develops R&D activities and knowledge valorization practices that focus on three main areas: *innovation management*; *entrepreneurship* (including social entrepreneurship); and *innovation & technology management and technology transfer for entrepreneurs*.

UITT's main areas of expertise include innovation management, technology commercialization and strategy, academic entrepreneurship, innovation networks, engineering systems design, and technology policy.

UITT also provides incubation services (at the stages of idea development and proof of concept) for technology-based entrepreneurial projects at LET-in, which is the Laboratory of Technological Companies of INESC Porto. Many successful companies have already been incubated at UITT, including Xarevision, Tomorrow Options (with a branch office in the UK), AUDOLICI, NextToYou, SmartWatt and Process.net - Sistemas de Informação, Lda.



## University of Porto

UPIN - University of Porto Innovation

<http://upin.up.pt>

The University of Porto is the largest science and innovation player in Portugal, producing one fifth of the scientific articles published each year, as well as some of the most progressive innovations in the Portuguese industry. With origins dating back to the eighteenth century, the University of Porto is currently the largest education and research institution in Portugal and is listed in the top 200 universities in Europe.

University of Porto Innovation (UPIN), the technology transfer office of the University of Porto, was founded in 2004 to support the link between academic and private sectors in the fields of intellectual property (IP), technology transfer (TT), spin-off creation and international competitive R&D funding. By stimulating the creation of new companies, new jobs, and enlarging the university's collaboration with industrial partners, UPIN aims to obtain significant results that foster U.Porto's mission to affirm itself as a major contributor to the socioeconomic development of the Northern Region and Portugal. Since its creation, UPIN has been able to:

- Raise awareness of U.Porto's members to the importance of intellectual property protection, and increase the number of patents and licensing revenues for the University
- Promote entrepreneurial spirit and provide mentoring for students and researchers who wish to create spin-off companies
- Increase the funding for R&D activities and the number of research collaborations between university and industry.

To accomplish its mission, UPIN relies on a multifaceted team as well as strong partnerships developed over the years, with several national and international organizations, to help accelerate the conversion of University of Porto research into tangible innovations.

## University of Trás-os-Montes e Alto Douro

GAPI-OTIC - Technology Transfer Office at UTAD

[www.utad.pt](http://www.utad.pt)

With 8,300 students, the University of Trás-os-Montes e Alto Douro's mission is education, research and extension. Research activities at UTAD are concentrated in five schools with 500 researchers.

The tech transfer office at UTAD is seven years old with a considerable body of work completed in intellectual property protection and technology transfer.

One advantage of UTAD's technology transfer office is the staff's multidisciplinary background (including biology, engineering, and economics) which results in high value and versatility for the office.

The University of Trás-os-Montes e Alto Douro has a wide portfolio of patents, that span various disciplines and industries, including ambient and renewal energies, chemistry, agriculture, mechanics, and engineering.

The TTO has around €11 million in projects in diverse areas such as engineering, food chemistry, environment, agriculture, animal husbandry, and wine.



## PROMOTION OF ENTREPRENEURSHIP

### AvePark

Science and Technology Park  
[www.avepark.pt](http://www.avepark.pt)

Located between Braga and Guimarães, Avepark meets regional innovation concerns. Avepark was incorporated in May 2004 and includes the following entities: Guimarães City Hall, The University of Minho, the Association of Science and Technology Parks of Porto, the Minho Industrial Association, and the Guimarães Association of Commerce and Industry.

Avepark has six buildings: (1) the Spinpark incubator of the University of Minho, (2) the European Institute of Tissue Engineering and Regenerative Medicine building, (3) the CRH building, (4) the Avepark core building (5) the Farfetch.com building (6) the T4 Continuity building. The Center for Business at Avepark has fourteen companies from technology sectors including biotechnology, information systems, technology, video surveillance, and smart textiles.

The Avepark Science and Technology Park's network includes business management, entrepreneurs and entrepreneurial support, researchers, and college students who operate in the spirit of constant development of new ideas and the implementation of new products and services. Avepark's model is based on shared risks and goals that lead to commercial success in the global market.

Avepark has an annual environment that enables businesses and institutions to operate in an informal and creative environment. Avepark also promotes events that attract different companies, institutions, and talent as well as the larger community by offering advantages in terms of networks and value-added support.





## CEIM | BIC MADEIRA

Centro de Empresas e Inovação da Madeira and  
Madeira Business Innovation Center  
[www.ceim.pt](http://www.ceim.pt)

Established in 1997 and currently under the tutelage of the Regional Government's Vice-Presidency, BIC Madeira (Madeira Business Innovation Center) is responsible for the development and application of the European Commission's Business Innovation Centres Program (EC-BIC's) in Madeira. A strategic partner for regional development, BIC Madeira encourages small and medium venture creation by bringing entrepreneurship to life, highlighting modernization and business innovation. CEIM|BIC Madeira's principal mission is to give a full range of support to promoters of innovative projects and ideas and hi-tech products and services, providing assistance at each phase of development: feasibility studies, business plan development, financial engineering and start-up, as well as continuous follow-up during the first years of the new activity.

CEIM is full member of EBN - European Business and Innovation Centres Network. The integration of CEIM in the EBN Network, with more than 140 BICs throughout Europe, allows additional support in the development of innovative projects, in such important matters as entering foreign markets, internationalization/transnational cooperation, exchange of experiences, transfer of know-how and technology, and being part of the BIC network, and its links to other European Union programs.

Established in Madeira Tecnopólo, CEIM reflects a broad-ranging consensus and mobilizes local potential within the framework of a global approach. It optimizes public and private resources to support initiatives that contribute, through their innovative nature and economic relevance, to wealth and job creation and to activity diversification. At the same time, CEIM helps interface results and connections between research and development entities and entrepreneurial activity. As a true strategic partner, CEIM helps support the creation of micro/small businesses, by bringing to life entrepreneurship, modernization, and business innovation.



## INOVISA

Technical University of Lisbon  
[www.inovisa.pt](http://www.inovisa.pt)

INOVISA (Association for Innovation and Business Development) is a private non-profit association promoting the valorization of knowledge and technology developed at the School of Agriculture / Technical University of Lisbon ([www.isa.utl.pt](http://www.isa.utl.pt)) and facilitating the relationship between the university and the business sectors in the fields of agriculture, food, forestry, biotechnology and environment. In addition, INOVISA gathers skills for the development of start-ups and spin-offs, creating an innovation and entrepreneurship culture in academia. In this context, INOVISA acts on two complementary activities:

- Entrepreneurship and business development
- Innovation and technology transfer.

INOVISA is involved in several projects aiming at promoting university-enterprise partnerships:

- Rede INOVAR – The Portuguese Agro, Food and Forest Innovation Network
- RED-ITAA - a professional network for the agro and food sectors in Portugal, Spain and France
- Benchmarking projects on internationalization and innovation in the agro-food sector
- Several activities of Cooperation for Development in Angola and Mozambique focused on innovation, technology transfer and entrepreneurship.

INOVISA is also a partner of OTIC/UTL (the TTO of the Technical University of Lisbon).



## IPN – Instituto Pedro Nunes

<https://www.ipn.pt>

Instituto Pedro Nunes provides the main link between the University of Coimbra (Portugal) and the business sector. IPN's mission is to leverage a strong university/industry relationship to promote public and private innovation, rigor, quality, and entrepreneurship, by targeting three complementary areas:

- Research and technological development, consultancy and specialized services
- Business and ideas incubation
- Highly specialized training and promotion of science and technology.

IPN has technological infrastructures that include six R&D laboratories (Automation & Systems, Information Technologies, Materials, Electro analysis & Corrosion, Pharmaceutical Studies, and Geotechniques), as well as access to a network of researchers in the scientific and technological system, particularly from the University of Coimbra, mainly through the Faculty of Sciences & Technology. It is active in national and international networks including TII, EARTO, Incubator Forum, EBN and Proton Europe (Gate2Growth).

In 2010, IPN Incubator was awarded first place worldwide as “Best Science Based Incubator,” at the 9th Annual Incubator Conference and Awards on *Best Practices in Science Based Incubators*. The figures that made this result possible are the following:

- Total firms supported: > 180 (in 15 years)
- % of firms in activity: > 80%
- Annual aggregated turnover of incubated firms (2011): > 75 M euros
- Job creation: > 1.700 jobs (direct-high qualified)
- Self-sustainable business model
- High return on Public Investment

## ISCTE - Lisbon University Institute

<http://www.iscte-iul.pt/en/home.aspx>

<http://audax.iscte.pt>

<http://mitportugal-ieei.org/>

ISCTE - Lisbon University Institute is an institution of public higher education, established in 1972. ISCTE-IUL develops programs in education and training, research, and service to the community. Located in the University Campus of Lisbon, ISCTE-IUL currently offers 15 degrees in three major areas: Management Sciences, Social Sciences, and Technology-based Sciences. With approximately 8,400 students, 400 faculty and 200 non-teaching staff, the institute's priorities are innovation, quality and diversity, in both education and academic research. With great recognition in the labor market, ISCTE-IUL has a high rate of employability of its graduates, in some areas reaching 100% results.

AUDAX is the Entrepreneurship and Family Owned Business Center of Lisbon University Institute and offers:

- Specialized training courses in entrepreneurship, business start-ups, and family business management
- Development and support to research projects regarding entrepreneurship and family business; and promotion of conferences and publications related to entrepreneurship
- Promotes investment vehicles to support early stage businesses originated in universities
- Provides consultancy services in areas such as corporate finance, marketing, strategy, human resources, technology, innovation, production and lean management.

AUDAX has a flexible structure for technology transfer activities, and a strong multi-disciplinary team of PhD's, MBA's and Engineers with a proven industry track record and a broad range of technical skills.

The Building Global Innovator's Venture Competition (BGIVC) is an initiative that results from the partnership between ISCTE-IUL, MIT, Sloan Business School, Deshpande Center for Innovation and MIT|Portugal (a collaboration of the leading 12 engineering and science universities in Portugal).



## Madan Parque

[www.madanparque.pt](http://www.madanparque.pt)

Madan Park was founded in December 1995, with the associated members Faculty of Science and Technology of the New University of Lisbon (FCT-UNL), the rectory Universidade Nova de Lisboa (UNL), the Municipality of Almada (CMA) and UNINOVA (Institute development of new technologies), and has partnered with Seixal City Council (CMS) since 2002. The institution is located in Almada, one of the regions with the highest population growth in recent years in Portugal, with one of the latest scientific institutions in the outskirts of Lisbon, University of Nova Lisboa, consisting of five faculties, three institutes, and one business school.

Since its founding, Madan Parque's focus on entrepreneurship, innovation, and technology transfer has grown continually through programs in incubation process development and entrepreneurship support. With new incubation infrastructures that host more than 50 entrepreneur projects, Madan Parque was recently named third Best Science Incubator worldwide.

The Madan Park plays an important role in the interactions between science, technology, and society, with a demonstrated ability to facilitate and interface the necessarily varied connections between universities, markets, and companies that comprise the "Madan Parque" Ecosystem.



## NOVA University of Lisbon

NOVA University Entrepreneurship Office

[www.unl.pt/empreendedorismo](http://www.unl.pt/empreendedorismo)

NOVA Entrepreneurship Department's mission is to develop the entrepreneurship ecosystem across the University campus and within Lisbon. Education activities include an MSc course available to all NOVA University students (*Creating and Managing Entrepreneurial Ventures*), seminars, and the Nova Idea Competition—a University-wide business plan competition that provides integrated learning and multidisciplinary work.

The NOVA University Entrepreneurship Department's mission is to develop the university's entrepreneurial ecosystem by working closely with students, teachers, researchers, alumni, industry associations, and venture capitalists. In order to achieve this objective, the Entrepreneurship Council was created with the participation of all the NOVA University Schools, to take part in all the decisions concerning the entrepreneurship activities developed at NOVA University and thereby guarantee the involvement of all the members within the university and the existence of a true multidisciplinary work. The Entrepreneurship Pro-Rector, Prof. Doutor Paulo Soares de Pinho, establishes the link between the Entrepreneurship Council and the Rectoral Team, reinforcing this priority. The Entrepreneurship Department follows the decisions made by the Entrepreneurship Council for education and activities.





## Parkurbis S&T Park of Covilhã

[www.parkurbis.pt](http://www.parkurbis.pt)

Parkurbis, the Science and Technology Park of Covilhã promotes new technology-based activities and fosters a dynamic exchange between the University of Beira Interior (UBI) and local enterprise, thus helping the R&D supply meet the demands of Parkurbis-based businesses.

The park supports UBI research projects; works as an interface between UBI and Parkurbis-based companies; promotes activities in the sphere of technological research; provides support services to existing companies (including traditional ones) and start-up companies; and supports integrated development in the region and the establishment of highly qualified professionals.

Parkurbis facilities comprise outstanding conditions for the formation, setting up, and development of technology-based companies. Parkurbis has established a number of protocols with financing institutions (venture capital societies, and a contact network that includes banks and business angels) interested in supporting projects and companies based at Parkurbis. Services are based on four major pillars:

1. Promotion of entrepreneurship
2. Support to the creation of new technology based firms (NTBF)
3. Access to funding
4. Internationalization

Parkurbis fosters the creation and development of an innovative entrepreneurial ecosystem that contributes to the excellence of a new generation of firms and helps existing firms become more competitive.



## Sines Tecnopolo

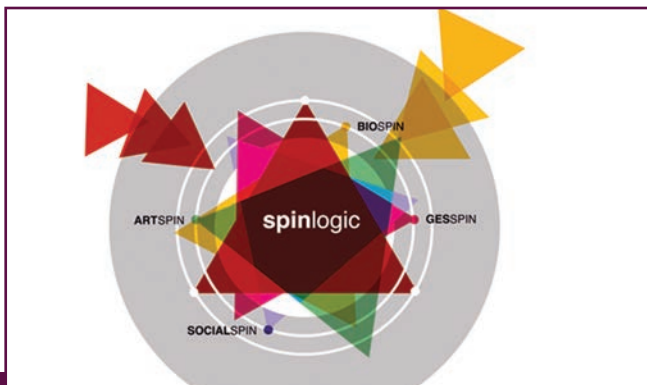
[www.sinestecnopolo.org](http://www.sinestecnopolo.org)

Sines Tecnopolo is a science park in the city of Sines in the South Region. It was founded in 2007, through cooperation of: two public universities (the University of Algarve [[www.ualg.pt](http://www.ualg.pt)] and the University of Évora [[www.uevora.pt](http://www.uevora.pt)]); two public tech faculties (Polytechnic of Beja [[www.ipbeja.pt](http://www.ipbeja.pt)] and Polytechnic of Setúbal [[www.ips.pt](http://www.ips.pt)], with the support of the Sines City Council [[www.sines.pt](http://www.sines.pt)].

The project was established to catalyze the Sines ecosystem, and to pursue the core mission to facilitate and accelerate entrepreneurial business dynamics through collaborative action and knowledge sharing. Sines Tecnopolo serves as a magnet for talent, creativity, entrepreneurs, and companies, to leverage opportunities for employment, business, and sustainable development. It has pursued several European and national R&D programs, including:

- The MED EU program to pursue energy efficiency in buildings
- The Interreg-Sudoe to pursue development of road pavement materials
- The Equal Program to promote entrepreneurship
- The EIBT-Sudoe program to pursue for developing of technology-based spin-offs
- The COMPETE national program to promote and develop regional innovative networks
- The Blue Corridor national program

Sines Tecnopolo is proud to be the first Tecnopol with a quality client-oriented management team achieving an ISO 9001:2008 accreditation. We have met the criteria of the European Business Network in Brussels to attain the seal of BIC: a European Community Business Center. Our training unit holds the DGERT accreditation provided by the Labor Ministry, a quality seal needed for training and education programs obtaining public financing.



## Spinlogic – Católica Porto | Incubator

[www.porto.ucp.pt/spinlogic](http://www.porto.ucp.pt/spinlogic)

Incubation at Católica Porto is one part of the university-wide Spinlogic strategy that spans the Portuguese Catholic University. It is oriented to developing talent and project teams, giving the whole initiative to the entrepreneurs, to ensure they will receive the full benefits from their projects.

Developing a new business product or service demands teamwork, strong leadership skills, and great resilience. The Spinlogic Incubator involves more than 150 people from more than 50 businesses at different stages of development across four areas:

- *Biospin*, bio-economy
- *Artspin*, cultural and creative industries
- *Socialspin*, social economy
- *GesSpin*, cross-sectorial areas

The following singularities provide the program with a unique and innovative character:

- A very close connection between the incubated projects generates value for all.
- A professor tutors each thematic spin, and internal and external mentors help oversee the projects.
- The existence of synergies between the incubated companies and Católica Porto is a mandatory entrance requirement; the University doesn't accept projects to which it cannot add value.
- The ethical concerns valued throughout the community of Católica Porto are reflected in the culture of self-discipline and responsibility among all the incubated companies.
- The technological factor is prominent in all areas of Spinlogic, whether it is Arts, Social Economy or Biotechnology.

## Taguspark, S.A.

[www.taguspark.pt](http://www.taguspark.pt)

Taguspark, Science and Technology Park, located in Oeiras, was founded in 1992 as a melting pot, not of chemical components or different cultures, but of different nuances of knowledge: knowledge created in research institutions, transmitted in universities, and put into practice in companies.

*A Strategic Triangle.* The founding concept of Taguspark is to utilize and optimize and this knowledge supply chain, and to leverage synergies between universities, R&D institutions, and technology-based companies, which are the three pillars of its occupancy.

*Engine of development.* Determined to provide opportunities to develop working skills, innovation, and research for the people who work here, Taguspark has served as a regional engine for social and economic development. Its space is organized to meet functional and physical needs of its companies, universities, and research institutions, reflecting sensitivity for the human dimension.

*Environmental quality.* The structural elements of the project include a low construction rate, the retention of large green areas, and a requirement that all entities be non-polluting.

*Integration within the Oeiras Valley.* Taguspark is located in the Oeiras Valley, a region of integrated development, supported by knowledge-intensive units linked to clusters of *Information Technology, Communication, Biotechnology & Health Technologies*, and *Tropical Technologies*.

*Excellent surroundings.* Located just a few minutes from downtown Lisbon, Taguspark's surrounding area reflects a high quality of life in the midst of prestigious urban areas with accessibility to networks, clinics, schools, and colleges, making this a prime area for living and working.



## University of Aveiro

[www.ua.pt](http://www.ua.pt)

One mission of the University of Aveiro is to promote entrepreneurship and support technology-based company creation. These activities are facilitated by UATEC (University of Aveiro Technology Transfer Unit) and IEUA (University of Aveiro Business Incubator).

*The University of Aveiro Technology Transfer Unit (UATEC)* supports UA in its goal to be a national center of excellence for knowledge creation and dissemination. UATEC supports entrepreneurship in the academic community with special focus on technology-based products and services. UATEC promotes entrepreneurship through coaching; identification and selection of mentors; providing courses in entrepreneurial skills; mentoring in market research and development of business plans; defining strategies for protection, valorization, and commercialization; mobility (Erasmus for Young Entrepreneurs Programme); proof of concept; identification of suitable funding sources (e.g., business angels and venture capital schemes) and organization of idea competitions. The UATEC promotes training activities and personalized services (e.g., individual mentoring meetings) to regional entrepreneurs and the academic community to help empower them for entrepreneurial success.

*The University of Aveiro Business Incubator (IEUA)* is a functional unit of University of Aveiro (UA), managed by Grupunave, Inovação e Serviços Lda., one of the university interfaces to disseminate science and technology generated at UA. Located at Building 1, at University Campus of Santiago, IEUA offers an area of 558m<sup>2</sup> for business incubation, distributed by 18 individual offices, one co-working office, two shared spaces and one team office.

IEUA's mission is to encourage the development of innovative business projects by providing entrepreneurial training, spaces for business incubation, a set of services, and a network of partners oriented to create value and implement business ideas. The program incorporates five stages of incubation support with specific milestones to be met by member companies. Those who successfully complete the program are enabled to develop their business autonomously, earning the status of IEUA Graduated Company.

## UPTEC - S&T Park of University of Porto

<http://uptec.up.pt/en/>

The Science and Technology Park of University of Porto is a space for the mutual leverage of skills between academia and businesses, which seeks to take advantage of this real proximity to act as a provider of interconnection between these two media, capable of creating an environment conducive to innovation and to the installation of technology-based and or creative businesses.

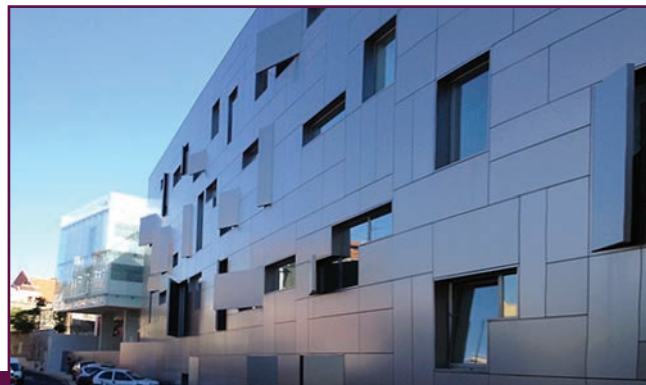
UPTEC is a structure capable of enhancing the socio-economic aspects of the Porto region, as it concentrates a large number of start-ups and private R&D centers around the University of Porto.

Divided into four distinct centers (Technology Center, Creative Industries Center, Sea Technology Center, and Biotechnology Center) the UPTEC includes two types of support structures for businesses, including an Incubator and a Center for Business Innovation.

In the Incubator, entrepreneurs find the necessary support to turn their ideas into businesses with potential for rapid growth. At the Center for Business Innovation, existing businesses will find the space and mechanisms to host and operate their projects and activities, benefiting from the synergies that exist between the R&D departments and other UP institutes.







## RESEARCH INSTITUTIONS CONNECTED WITH UTEN

### **CEDOC - Chronic Diseases Research Center**

The Chronic Diseases Research Center (CEDOC) lies at the heart of the School of Medicine at NOVA University of Lisbon. At CEDOC, we bring together biomedical, translational, and clinical research, in a collaborative spirit. Our research units are multidisciplinary in nature and comprised of both academics and clinicians. CEDOC hosts more than 30 groups and nearly 200 researchers devoted to understanding a variety of chronic pathologies, from diabetes to rare auto-immune diseases. The majority of our researchers also hold primary and secondary appointments at the School of Medicine or with hospitals in the Great Lisbon Area.

CEDOC's multidisciplinary environment focuses on translational research, which stimulates an attractive and creative milieu for graduate students and post-doctoral fellows to further their careers. We will soon open a spacious, state-of-the-art research building in central Lisbon, adjacent to the School of Medicine. The new space will open opportunities not only to expand the research programs at CEDOC, but also to host services to the community and a number of biotech companies.





## FUNDAÇÃO CALOUSTE GULBENKIAN Instituto Gulbenkian de Ciência



### IGC - Instituto Gulbenkian de Ciência

Instituto Gulbenkian de Ciência (IGC) was founded and is supported by Fundação Calouste Gulbenkian (FCG) to carry on biomedical research and education. The IGC operates as a “host institution,” to offer excellent facilities and services to foreign and Portuguese research groups, and individual scientists, particularly to young post-doctoral fellows who are expected to develop their projects and form their groups in complete autonomy. IGC’s scientific interests focus on the genetic basis of development and evolution of complex systems, privileging organism-centered approaches in experimental models that include plants, yeast, flies, and mice, and on the genetics of complex human diseases. A strong theoretical sector, high quality services, and opportunities for international exchange in the form of graduate courses, workshops and symposia, are some of the IGC’s main specificities. Our campus is located in Oeiras, on the Tagus bank, alongside other research institutions in biology, biotechnology and chemistry with complementary interests and competencies.

Technology transfer activities include sourcing invention disclosures, guaranteeing patent protection, licensing technologies, forming spin-out companies and managing consultancy opportunities for scientists. Technology transfer is an undisputed source of socio-economic growth internationally and an absolute necessity for institutions like the IGC, which are set on seeing their research have a direct, global impact on society. IGC’s Technology Transfer Office works as a liaison between industry and academia, facilitating communication between these very different sectors. We offer several services to researchers, including counseling on industry relations, assistance with intellectual property matters and sourcing of sponsored research agreements.

### IMM - Instituto de Medicina Molecular

The Instituto de Medicina Molecular (IMM, [www.imm.fm.ul.pt](http://www.imm.fm.ul.pt)) is a research institute affiliated with the University of Lisbon Medical School, located at the Santa Maria Hospital campus. The mission of IMM is to foster basic, clinical and translational biomedical research that contributes to a better understanding of disease mechanisms, and the development of novel predictive tests, and diagnostic and therapeutic approaches. Established in 2004, IMM has acquired the special status of Associated Laboratory from the Portuguese Ministry of Science and Higher Education. IMM is a non-profit private research institute, supported mainly by national public funds, European Union funds, and private foundations.

IMM hosts 28 independent research groups (with a total of 435 researchers), whose interests fall within three major IMM research programs: *cell and developmental biology*, *immunology and infectious diseases*, and *neurosciences*. Its physical proximity to both the hospital and the medical school creates opportunities to bridge “bedside” research and promote translational research. The institute also hosts and collaborates with a number of start-up and biotechnology companies in areas of biomedical technologies and sophisticated health care delivery. Presently, there are three companies incubated at IMM: Genomed, Technophage and Thelial.



## IN+ Center of Innovation, Technology & Policy Research

<http://in3.dem.ist.utl.pt/>

The multidisciplinary activities of IN+ (Center of Innovation, Technology & Policy Research) link basic and applied research to technology development that focuses on sustainability issues including environmental conservation, management of energy resources, and economic development. Within this context, the center also undertakes interdisciplinary research involving technology policy, to promote sustainable and socially responsible industrial development.

The research component in management of technology and innovation policies has been implemented in close cooperation with advanced education, including the PhD program in “Entrepreneurship and Technical Change,” established in 2007 in close cooperation with the School of Economics of the Portuguese Catholic University and Carnegie Mellon University. Education activities also include VECTORE (since 2001), an annual “informal” non-degree program that promotes the commercialization of science and technology and the launching of entrepreneurial ideas and projects VECTORE - Valorização Económica de Ciência e Tecnologia e Organização de Empresas. Previous related initiatives include the IMPACT Program in 1998-2000, “Innovation and Internationalization of Companies through the Application and Commercialization of Technology” which was the first international education program delivered in Portugal in the area of entrepreneurship. IN+ provides an online video connection to the Master of Science Technology Commercialization (MSTC) degree program at The University of Texas at Austin.

Among other awards, in 2005 the center was named one of the “Top 50 global centers of research on Management of Technology,” by the Int’l Association for the Management of Technology, IAMOT.

## Instituto de Tecnologia Química e Biológica

The Instituto de Tecnologia Química e Biológica (ITQB) is a research and advanced training institute of the Universidade Nova de Lisboa. Its mission is to carry out scientific research and postgraduate teaching in chemistry, the life sciences, and associated technologies, while also serving the community and performing university extension activities for the promotion of science and technology. ITQB coordinates one of the largest “Laboratório Associados” in Portugal, which also includes the Instituto Gulbenkian de Ciência, the Instituto de Biologia Experimental e Tecnológica and the Centro de Estudos de Doenças Crónicas. ITQB’s highly multidisciplinary nature makes it a leading center for the advanced training of researchers in Portugal. Currently, it hosts 62 independent laboratories grouped into five research divisions and comprising a staff of more than 400 researchers, with different backgrounds and research interests. They benefit from outstanding research facilities, equipment, and scientific support services, some of which are unique in the country.





David Gibson, UTEN Austin Director, Marco Bravo, UTEN Program Manager, and Juan Sanchez, Vice President for Research at The University of Texas at Austin meet with Nuno Brito, the Ambassador of Portugal, to discuss the program's long term impact on Portugal.

### 4.3 Texas Partners

When the IC<sup>2</sup> Institute helped coordinate the launch of the UTEN program, in doing so, the Institute leveraged a number of partners from its robust “know-how” network in order to provide highly valuable training and networking opportunities that were broad-based, diverse, and most importantly, to gather representatives with many years of experience in technology transfer and commercialization specifics. The value of these partners to the UTEN program cannot be overstated. Descriptions follow.

*IC<sup>2</sup> Institute: Innovation, Creativity, Capital*  
[www.ic2.utexas.edu](http://www.ic2.utexas.edu)

The IC<sup>2</sup> Institute is a globally recognized “think and do” research center at The University of Texas at Austin. The Institute’s mission is to engage in cutting-edge research that contributes to solving unstructured problems related to market economies worldwide with a focus on accelerated technology-based growth. This mission is carried forward with experiments in the Institute’s research laboratories and within the context of the “real world” to facilitate knowledge transfer that impacts emerging, developing, and developed economies.

The IC<sup>2</sup> Institute has more than 30 years of experience in researching, working, and partnering on S&T

commercialization and regional development projects. A key resource of the Institute is the IC<sup>2</sup> Fellows Global Knowledge Network that includes over 160 active academics, scientists, managers, and public sector leaders from a broad range of institutional backgrounds and professional disciplines. Several IC<sup>2</sup> initiatives and programs have established leading national and international reputations, and these programs and activities have been part of the UTEN program: working with Portuguese technology transfer managers and staff, technology entrepreneurs, and select civic, academic, and business leaders. The following IC<sup>2</sup> Institute programs and Texas-based organizations have contributed to UTEN results.

*The Austin Technology Incubator (ATI)*  
[www.ati.utexas.edu](http://www.ati.utexas.edu)

Launched in 1989, the Austin Technology Incubator is an experiential laboratory for research, education, and advancement of technology-based entrepreneurship. ATI leverages business, government, and academic resources to provide strategic counsel, operational guidance, and infrastructure support to its member companies to accelerate their transition from early stage ventures to successful, globally competitive technology businesses. In 1993 ATI established incubator programs for NASA at Ames Research Center





The IC<sup>2</sup> Institute at The University of Texas at Austin coordinates the UT Austin| Portugal International Collaboratory for Emerging Technologies (CoLab), and the UTEN program.

in Sunnyvale, California and Johnson Space Center in Houston, Texas; and in 1995, for the National Oceanic and Atmospheric Administration (NOAA), and in Charleston, South Carolina. In 1994, ATI received the NBIA National Business Incubator of the Year Award and launched six incubators in Russia under a USAID Program. In 1996 ATI received the Justin Morrill Award from the U.S. Technology Transfer Society and an ATI' company (Evolutionary Technologies International/ ETI) was named NBIA incubator graduate of the year.

ATI has trained and worked with incubator directors and managers and has hosted technology ventures with regional development leaders in Russia, Canada, Brazil, Japan, India, Korea, Mexico, Chile, Portugal, Australia, England, Poland, Germany, China, and Israel. In Portugal, for example, through collaboration with the Vector E IMPACT Program of the Technical University of Lisbon (IST), ATI played a key role in the U.S. incubation and launch of the well-known Portuguese start-up venture, Critical Software. Currently ATI focuses its incubation efforts in IT and wireless, bioscience, and clean energy.

***Mexico's Technology Business Accelerator (TechBA)***  
[www.techba.com](http://www.techba.com)

TechBA Austin began operations in the Austin Technology Incubator in December 2005, with the objective to accelerate innovative Mexican-developed technology-based businesses to the U.S. market. Teams

of experts from IC<sup>2</sup> Institute work in coordination with TechBA's management team to support the Mexican companies in U.S. business development. Valuable lessons have been learned for the UTEN Program. For example, with the assistance of TechBA and IC<sup>2</sup> Institute, in November 2008 Merkatum Corporation received \$1 million from the Texas Emerging Technology Fund (ETF) to expedite the commercialization of its web-based biometric software systems in the U.S. market. The ETF was created as a tool to develop and diversify the Texas economy by expediting innovation and commercialization of research. UTEN Austin works actively with select Portuguese companies to possibly benefit from the ETF.

***UT Austin Office of Technology Commercializat'n (OTC)***  
[www.otc.utexas.edu](http://www.otc.utexas.edu)

UT Austin's OTC bridges the research community at The University of Texas at Austin with national and international commercialization partners with the objective of ensuring an efficient and effective transfer of intellectual property created at the university. The OTC serves three distinct groups: the research community at the university, commercial partners, and society. Its managers and staff actively engage in training and mentoring Portuguese UTEN TTOs as well as serving as institutional hosts for several month-long internship programs. UTEN and UT's OTC are also working to explore creative and innovative ways to partner with Portuguese TTOs such as cross-licensing university-

based technologies and leveraging university-based research as well as exploring cross-national markets and licensing opportunities. UTEN has successfully linked Portuguese-based business plan competitions to Moot Corp and Idea2Product (I2P) competitions to facilitate global competitions and market considerations.

### *The City of Austin*

[www.TexasWideOpenForBusiness.com](http://www.TexasWideOpenForBusiness.com)

[www.austin-chamber.org](http://www.austin-chamber.org), [www.cityofaustin.org](http://www.cityofaustin.org)

Austin, Texas is pleased to be a valued partner in the UTEN Portugal collaboration. Based on many national and international rankings, Austin is judged as one of the top United States cities in terms of entrepreneurship, economic growth, and quality of life and is often referred to internationally as the “Austin Model” in terms of results oriented academic-business-government collaboration leading to accelerated technology-based growth. In short, Austin is considered an ideal United States city partner for Portugal’s University Technology Enterprise Network (UTEN). Key to Austin’s successful technology-based growth is the fact that the city and The University of Texas at Austin are able to attract and retain key U.S. and international talent, which has been crucial to the establishment of globally competitive clusters in semiconductors, software and IT, computers and peripherals, and creative industries, as well as emerging clusters in biosciences, nanotechnology, digital media, clean energy and wireless technology.

### *Additional Texas Partners*

UTEN Austin has engaged the support of key Texas universities, their TTOs, and entrepreneurial centers state-wide to partner with the UTEN Portugal program. The vast size and diversity of Texas educational and economic activities provides a broad range of partnering opportunities for Portuguese TTOs focused on different industry sectors, geographic realities, populations of different size and character, and regionally-based challenges and opportunities. Working with these Texas-based partners UTEN takes an open and collaborative approach with researchers, inventors, industry partners, and potential investors.

### *Emergent Technologies, Inc., Austin, Texas*

[www.emergenttechnologies.com/growing-biotech.html](http://www.emergenttechnologies.com/growing-biotech.html)

Emergent Technologies works to create value using a unique technology innovation processes to transform scientific breakthroughs into technology platforms with multiple commercial applications. Emergent transforms research into revenue by means of an expert driven and disciplined selection criteria based primarily upon scientific thought leader sponsorship and a market driven product development processes.

Emergent’s main focus is to unlock the commercial potential of a scientific breakthrough. In addition, Emergent’s use of management and capital resources minimizes the economic risk typically associated with developing early stage technologies. The biotech sector is Emergent’s main technology focus and current Emergent portfolio companies include AeonClad

Biomedical, LLC; AeonClad Coatings, LLC; Appian Labs, LLC; Auxano Biomedical, LLC; Heparinex, LLC; Pure Protein, LLC; and Reveal Sciences, LLC.

### *OTC, University of Texas at Dallas*

[www.utdallas.edu](http://www.utdallas.edu)

Housed in the heart of the Texas Telecom Corridor, the University of Texas at Dallas’ Office of Technology Commercialization was created in April 2008 with a venture-experienced team and customer-oriented philosophy to move commercially viable inventions more effectively from lab to market. The OTC streamlined its invention disclosure and evaluation processes with UTD’s Institute for Innovation and Entrepreneurship (IIE), which focuses on creating and incubating UTD-affiliated start-ups (<http://innovation.utdallas.edu>). The mission of the OTC is to effectively and efficiently facilitate the evaluation processes, protection, patenting, and transfer of commercially viable, UTD innovations for the economic, social, environmental and cultural benefit of citizens of the region, the state, and society in general.

### *OTC, Texas A&M University*

<http://otc.tamu.edu/index.jsp>

The mission of the Office of Technology Commercialization at Texas A&M university is to encourage broad application of Texas A&M System research for public benefit; to assist the A&M System and its associates to protect, license, and commercialize their discoveries; to ensure the equitable distribution of royalties and other monetary benefits through exploiting intellectual property; and to see that commercialization activities benefit the research, education and outreach missions of the A&M System. Founded in 1992, The OTC manages more than 900 patents and 1,500 patent applications relating to a portfolio of some 2,600 inventions. According to the Association of Technology Managers Annual Survey, the OTC is eighth in the nation in the number of license agreements generating revenue. The A&M System is one of the largest systems of higher education in the nation, with a statewide network of nine universities, seven state agencies and a comprehensive health science center. The A&M System educates more than 109,000 students and reaches 15 million people through service each year.

### *Office of Technology Commercialization, South Texas Technology Management (STTM), San Antonio*

[www.utsystem.edu/sttm/index.shtml](http://www.utsystem.edu/sttm/index.shtml)

South Texas Technology Management (STTM) is a regional technology transfer office affiliated with the University of Texas Health Science Center at San Antonio, (UTHSCSA), and allied with the research departments of the University of Texas San Antonio (UTSA), the University of Texas Pan American (UTPA), and the University of Texas at Brownsville (UTB). STTM’s mission is to provide comprehensive and integrated technology development services for affiliates using the most effective protection and commercialization strategies to stimulate and capitalize on each University’s intellectual property





An early UTEN strategy session. Clockwise from left: José Mendonça, Maria José Francisco, Marco Bravo, Pedro Madeira, Ana Paula de Amorim, Maria Oliveira, and Laura Kilcrease (2008).

portfolio, thereby achieving maximum economic and humanitarian value for the institutions, staff, and communities. STTM's office is organized and staffed to handle the multiple demands of a full-service office dedicated to stimulating growth in the quality and size of the intellectual property portfolio.

### *Three Day Startup (3DS)*

[www.tritonventures.com](http://www.tritonventures.com)

Three Day Startup (3DS) began in 2008 with the assistance and oversight of the Austin Technology Incubator on campus at The University of Texas at Austin. Originally a student organization, 3 Day Startup is now a 501(c)(3) non-profit organization. The idea of 3 Day Startup is simple: start tech companies over the course of three days. We rent work space for an entire weekend, recruit 45 student participants from a wide range of backgrounds, cater food and drinks, and bring in top-notch entrepreneurs and investors. The participants pick the best ideas for startups during the Friday brainstorming session and deliver prototypes and investor pitches on Sunday night. They have conducted 38 events on 4 continents that have given rise to 28 companies receiving \$8 million in funding.

### *Triton Ventures*

[www.tritonventures.com](http://www.tritonventures.com)

Triton Ventures, LLC, is a venture capital fund investing in spin out and early stage technology companies. With more than 25 years of hands-on experience in commercializing technology, the company's founder,

Laura Kilcrease, has a deep understanding of how to "grow businesses around businesses" as well as how to deconstruct and reconstruct business models to achieve significant results. She provides ongoing counsel to portfolio companies regarding management teams, industry and financial marketplace issues, introduction of strategic and investment partners, and positioning the company for public offering, merger, or sale. She has served as director on the boards (including audit and compensation committees) of portfolio companies Applied Science Fiction, Charitygift, Exterprise, Hart Intercivic, and LNNi.

### *INCELL, San Antonio*

[www.incell.com](http://www.incell.com)

INCELL Corporation, LLC is a biopharmaceutical products manufacturer and contract services company with Innovative Life Science Solutions™ for its industry, government and research customers worldwide. Founded in 1993, INCELL is registered with FDA as a manufacturer of sterile liquid fill products and medical devices, and for process and use of human cells. INCELL's mission is to provide innovative life science solutions to patients and professionals personalized medicine, stem cell technologies, cancer technologies, non-needle vaccines, cryopreservation tools, novel manufacturing, and rapid inexpensive diagnostics with high quality products and services.





Carnegie Mellon University has been an active partner in the UTEN program, providing workshops, hosting international interns, providing an entrepreneur-in-residence program, and more.

#### 4.4 Carnegie Mellon | Portugal & UTEN Portugal Programs

The Carnegie Mellon Portugal program has partnered with University Technology Enterprise Network Portugal (UTEN Portugal) and created multiple opportunities for collaboration which included numerous training workshops, a Professional Development Study program and most recently an Entrepreneurship in Residence (EIR) pilot program. The joint collaboration between Carnegie Mellon University, through the CMU Portugal, and the Portuguese institutions through UTEN started in 2008. The organization of strategic events in technology transfer and entrepreneurship areas, with the presence of several speakers from Carnegie Mellon University in Portugal, enabled the creation of critical mass for these areas inside the Portuguese universities. Currently there is a solid bridge between the U.S. university stakeholders, and the Portuguese universities TTO's and even with some entrepreneurs.

##### *Workshop: "Experiencing Technology Transfer: Collaborating with Carnegie Mellon"*

Held from 8-10 November 2009, this event was hosted by the Instituto Pedro Nunes (IPN), at the Universidade de Coimbra. It attracted more than 20 participants from technology transfer officers to researchers, college professors, and technology-based entrepreneurs. The main objectives of this workshop were to present the Carnegie Mellon University model for technology transfer and entrepreneurship development and to

provide training to Portuguese technology transfer offices (TTOs) in licensing issues, technology transfer models, skill development, and metrics to measure success. On the first day, Carnegie Mellon experts presented the university's overall approach to regional economic development and provided an overview of the university's TTO, Office of General Counsel, and Office of Government Relations and the interface between those offices and other departments within the university. Portuguese corporate representatives addressed the importance of technology transfer from their perspective. Following the general sessions, in depth presentations focused on software licensing issues and start-up models and on TTO models, skill requirements and metrics to measure success.

The second day was limited to a select group of TTO participants from within Portugal. It consisted of a presentation on Carnegie Mellon's standard license and spin-off license templates and a discussion of common licensing issues and concerns. In addition, the experts will guide the participants through case studies illustrating key points of deal valuation and structure and license negotiation.

The international experts from Carnegie Mellon University leading the workshop were Timothy P. McNulty (Associate Vice President for Government Relations), Tara Branstad (Associate Director of the Center for Technology Transfer and Enterprise Creation, CTTEC, also sitting at UTEN's International Advisory Board), and Mary Beth Shaw (Assistant General Counsel of the Office of General Counsel).

### *Workshop: "Commercialization & Technology Transfer in Information and Communication Technology"*

Held on June 15-16, 2010, this event was hosted by the School of Economics and Management (FCEE) of the Catholic University of Portugal. Experts from Carnegie Mellon University discussed how a university can engage corporate partners in the process of innovation and technology commercialization. An overview of different functional offices was provided as well as strategies for working together to achieve the greatest benefits for the university, its faculty, and corporate partners.

Keynote speaker Hyong Kim presented challenges in collaborative research within communication security and information networking. Various examples of corporate partnering were introduced and discussed, including corporate gifts, sponsored research agreements, consortium agreements, licenses and the use of master agreements. In addition, discussion focused on cultivating corporate partnerships, alumni relationships, and efforts to attract key corporate partners to facilities on or near campus. Additional CMU speakers included Gene Hambrick (Corporate Relations of CyLab), Bill Swisher (Acting Senior Director, Corporate and Foundation Relations), Curt Stone (Executive-in-Residence, Director of the QoLT Foundry and Industry Liaison), Tara Brandstad (Associate Director, Center for Technology Transfer and Enterprise Creation, CTTEC), Mary Beth Shaw (Assistant General Counsel), Amir Anwar (Director of International Alumni Relations), and Joanne Kyriacopoulos (Export Control Compliance Officer). During 2011, the Carnegie Mellon University's experts were involved in the 2nd UTEN Training Week in Evaluation of Intangible Assets and also on the initiation brainstorms with students to foster the early awareness of both graduate and undergraduate students for technology-based entrepreneurship and the creation of new ventures.

### *UTEN Portugal Training Week #2: "Valuation of Intangibles: Valuation of Licensing Opportunities and Early Stage Companies"*

On May 10-11, 2011, it was held the UTEN Portugal Training Week #2 – Valuation of Intangibles: Valuation of Licensing Opportunities and Early Stage Companies, at the UATEC, Universidade de Aveiro. The event was co-organized by the UTEN Portugal Network and the Carnegie Mellon Portugal Program. This Training Week included a two-day training workshop at University of Aveiro. The training focused on the valuation of intangible assets since the inability to do so puts universities and start-ups at a severe disadvantage when trying to monetize their discoveries through capital raises, licensing, joint-ventures or sales. The two training days were composed by three sessions, each with a hands-on training based on case studies to consolidate the learning process, namely: Valuation of Technology in University Licensing; Valuation of Early-Stage Companies; and Should the University own Equity in Start-ups? The speakers were: Tara Brandstad, Associate Director of the Center

for Technology Transfer and Enterprise Creation (CTTEC) at CMU; Barbara Carryer, Adjunct Professor of Entrepreneurship, Embedded Entrepreneur, Project Olympus, and Innovation Advisor, at the Institute for Social Innovation, Carnegie Mellon University; and Raymond F. Vennare, President, CEO and Co-Founder of Thermal Therapeutic Systems.

### *UTEN Conference 2011*

Rick McCullough, Vice-President of Research and Lord Professorship of Chemistry at Carnegie Mellon University, was the keynote speaker at the Annual Conference of UTEN Portugal 2011 entitled "The Role of Science and Technology in Transforming the Economic Fabric - Emerging Challenges and Opportunities for Global Technology Transfer and Commercialization", held on November 14, 2011.

### *2nd UTEN Portugal Workshop (in collaboration with Carnegie Mellon Portugal)*

The University of Algarve hosted the second UTEN Workshop 2012, which was organized in collaboration with CMU Portugal on 21st and 22nd May. Under the theme "Startup Funding: Streamlining Venture Capitalists and Business Angels", this workshop welcomed 20 participants from both the Technology Transfer Offices and the Industry fields, who intended to learn and discuss how to successfully get venture funding in the United States. The Rector of the University of Algarve, João Guerreiro, and a representative from the Portuguese Foundation for Science and Technology, Vasco Varela, opened the workshop. The workshop welcomed a renowned expert from Carnegie Mellon University (CMU), Robert Unetich, who gave a keynote speech: "Venture Capital in the United States, Getting Started" and had independent meetings with company representatives. João Correia de Matos (InovCapital) explained future perspectives for Venture Capital in Portugal. João Martins (MuchBETA), Luke Murray and Sofia Pessanha (Actualsun), and Diamantino Lopes (Metable) described their experience on the road to obtain investment.

### *Strategic Session: "Entrepreneurial and Regional Growth: Connect with Pittsburgh"*

Taking advantage of the presence in Portugal of Suzi Pegg, Vice President, International, Pittsburgh Regional Alliance (PRA), and DeWitt Peart, Executive Vice President, Economic Development, Allegheny Conference on Community Development; President, Pittsburgh Regional Alliance, an affiliate of the Allegheny Conference, Uten Portugal and the Carnegie Mellon Portugal program organized a Strategic Session, entitled "Entrepreneurial and Regional Growth: Connect with Pittsburgh", with the PRA representatives as Keynote speakers. The event was held at Universidade Nova de Lisboa, on 30 October 2012.

The guest speakers stressed that Entrepreneurship for the sake of entrepreneurship is no longer the answer to achieve regional growth, and that the future of regional growth that is tied to entrepreneurship comes from the





Carnegie Mellon University launched the UTEN Entrepreneurship in Residence program to help Portuguese companies enter the U.S. market.

efforts to connect regional participants and to further integrate larger and more established businesses all the way into the research activities of universities. The Pittsburgh region was presented as being the home to many materials companies who are leaders in their field, while the University of Pittsburgh and Pennsylvania State University develop world leading research in materials science. Therefore, if the researchers are interacting with the appropriate business leaders, there will be more awareness on the research and market problems can be considered.

### *TTOs Professional Development Studies*

Under the scope of the international internships program for technology transfer officers (TTO), Carnegie Mellon hosted six professional development studies professionals since 2010. Professionals traveled to Carnegie Mellon for 3-5 months to shadow various offices including: technology transfer, government relations and the legal department. This program created opportunities for mid-level professionals to be exposed to an international market in the above mentioned areas.

#### **• Sofia Vairinho, TTO at the University of Algarve (CRIA)**

Sofia Vairinho was at the Carnegie Mellon's Legal Department and at the Center for Technology Transfer and Enterprise Creation (CTTEC) at Carnegie

Mellon University. The main goals of this professional development study program were related with the standardization of procedures and the organization of a technology transfer structure, involving agreements drafting, consolidation of internal strategies on negotiating deals, intellectual property (IP), technology transfer and spin-off/start-up development. During the professional development program the professionals had the possibility to develop skills on different areas, such as the related with the IP policy, consulting, conflicts of interest and commitment, with the opportunity to have contact with the legal procedures regarding the Bayh Dole Act application. The benefit relied on the creation of a solid strategy for the University of Algarve on these issues. With the support from the tutors it was possible to create internal guidelines for the creation of spin-offs. Some important strategies were also established in order to protect the University's trademarks and defined some strategies on the negotiation procedures for the licensing agreements. During the program Sofia Vairinho had the possibility to develop negotiation skills and to create standard documents for the University of Algarve, based on the Portuguese legal orientations with the support of the Carnegie Mellon's models. Those documents are now part of the daily procedures at the University of Algarve (e.g. the Invention Disclosure form; the UALG decision Package; the UALG IIA; UALG's Trademark use guidelines; first approach to UALG's Spin-off guidelines).

• **Hugo Barros, TTO at the University of Algarve (CRIA)**

According to Hugo Barros, who was at the CTTEC, through the UTEN Portugal program, the University of Algarve was able to develop and consolidate international contacts with global and innovative companies and world known researchers and research centers (like Alan W. Black and CyLab). Through these connections progress was made in commercializing technologies developed by UAlg researchers such as EASY VOICE, a technology developed for handicap persons. The UTEN Portugal Professional Development Program at Carnegie Mellon University also allowed for the development and consolidation of first commercial contacts with specific entities like PLSG.

• **José Paulo Rainho, Director of the University of Aveiro's TTO (UATEC)**

José participated in the professional development study at CTTEC during the summer of 2010. He states that one of the main benefits of the UTEN Portugal program for UATEC was the on-site training in technology transfer and commercialization provided by international internships in prestigious institutions. Based on this on-the-job learning UATEC refined its commercialization processes to improve portfolio management and work distribution procedures, establish a well-defined pipeline and timelines, build improved relations with key TT functional areas including IP, entrepreneurship, and business development, and develop procedures to more effectively employ University of Aveiro interns in UATEC's activities.

• **Ana Teresa Pinto, TTO at the University of Aveiro (UATEC)**

Ana Teresa Pinto had her participated in the professional development study period at the CTTEC, during the summer of 2010. These immersions at Carnegie Mellon University were supported by the FCT and competitively offered to Portuguese technology transfer managers and staff. There are currently 2 selected internees pondering an immersion at Carnegie Mellon University in the summer of 2011.

• **João Simões, Technology Transfer & Innovation Manager at the University of Coimbra**

João Simões was at Carnegie Mellon from May 28 to September 18, 2011. His objective was to acquire training in professional technology transfer skills, with the main goal of leveraging current capabilities and enhancing the potential for the establishment of successful commercialization. Since the U.S. market is one of the Innovation and Knowledge Transfer Unit (DITS) at the technology transfer office at University of Coimbra (DITS's) main targets for the commercialization of technology, one of João's goals was to gather strategic insights on technology business activities in the U.S. and to begin building a structured network.

• **Diamantino Lopes, INESC TEC, Universidade do Porto**

Diamantino Lopes visited Carnegie Mellon between May 28 and June 5, 2011. During this period, Diamantino

Lopes internalized knowledge and expanded the scope of entrepreneurial activity through the access to all CTTEC team. CTTEC involved Diamantino Lopes in its daily routines allowing the access to CMU methodologies used on technology transfer activities and support to entrepreneurial projects. That allowed Diamantino to studied methodologies, techniques and tools for technology transfer and compares them with the ones applied in Portugal, specifically at INESC TEC. Strategic meetings were scheduled in order to allow Diamantino access information related with entrepreneurial activity in medical devices; the promotion of national technologies, in particular INESC TEC's, aiming for their licensing in the U.S. market; identification of complementary technologies, between INESC TEC and CMU, in order to establish technological partnerships; Establishment and encouraging of a long term cooperative relationship between INESC TEC and CMU for research projects; Access to technologies at CMU and evaluated their adequacy to Portuguese Technological Startups; Creation of a critical networking to maintain a technology transfer and joint ventures pipeline between INESC TEC and CMU.

**Entrepreneurship In Residence (EIR)**

The Entrepreneurship In Residence (EIR) is a Pilot Program developed and implemented by Carnegie Mellon University (CMU), which is organized with the support of the Carnegie Mellon Portugal Program in coordination with the UTEN Portugal Program. It started in July 2011 with the goal to educate and prepare a group of Portuguese startups to launch their businesses in the U.S. market.

Over a seven month period, the EIR was broken down into three Phases. Phases I and II prepared the companies to develop pitches to potential investors and customers, provides information on topics such as knowing your market and competition, university relationships, differentiation and segmentation, and partnerships for development and distribution. Phase III consisted of the Portuguese companies traveling to Pittsburgh, PA to participate in a "Business Week" which allow them the opportunity to make their pitch to potential clients, customers and investors. Additionally, the Portuguese businesses paired with specific U.S. companies of interest to discuss potential business options as it related to sales, customers and investment.

Five professionals from Carnegie Mellon University (CMU) served as mentors for the EIR participants which included: Tara Branstad from Technology Transfer, Babs Carryer, a faculty member from Heinz College, Dave Mawhinney, a faculty member from Tepper School of Business, Raymond Vennare, an entrepreneur and Michael Ransom, a staff member with the Corporate Relations Office.

The initial EIR Program kicked off in Lisbon, Portugal, September 27-28, 2011. Five companies were pre-selected to participate in the training/mentoring program: faces.in, Dognaedis, FeedZai, ObservIT and Treat U. For Phase I, Tara Branstad, Babs Carryer and Dave



Mawhinney were present in Portugal to lead a workshop whose goal was to explain the program, purpose, structure and expectations of EIR Phase I. Participants had the opportunity to make an investor pitch and receive feedback from the EIR Team. Independent work time was given to the EIR participants for them to make recommended changes on their pitches. During the two days, participants were exposed to training and mentoring on pitching, competition, knowing your market, investment, university relationships, IP rights, differentiation and segmentation, understanding the customer and partnerships for development and distribution.

On November 28- 29, 2011, the second phase of the EIR was conducted by Babs Carryer and Dave Mawhinney, and in February 2012, four Portuguese companies crossed the ocean and embraced the Phase III of the EIR. Four companies were selected:

- *FeedZai* is a start-up from the Universidade de Coimbra which aims to enhance the real time processing of information of organizations, large and small. FeedZai Pulse provides a turn-key solution for the customer's actionable information needs: a "Real-Time Business Appliance" that once connected to data sources immediately starts producing business critical information. <http://www.feedZai.com/>
- *ObservIt* is a start-up from the Instituto Superior Técnico of the Universidade Técnica de Lisboa, was established in 2001 with a simple dream: to create a market-leading company in computer vision technology, an emerging area whose potential was immediately evident. <http://www.observit.pt/>
- *Treat U* helps improve patient's health and reduce health care costs. Treat U has developed a novel and versatile platform for targeted drug delivery (PEGASEMP), allowing an increased concentration of a therapeutic agent to be effective only where it is necessary, hence increasing safety. <http://treatu.pt/>
- *Faces.in*, a startup from Instituto Superior Técnico of the Universidade Técnica de Lisboa, is a fast and fun way to discover friends nearby. Launched successfully with Vodafone as Vodafone Radar, Faces.in is positioned globally to allow mobile operators to get into the game of geo-location and social networking as a value-added revenue driver. <http://faces.in/>

These startups had the opportunity to participate in three days of intensive networking with companies from the Pittsburgh region, banks, attorneys, student and faculty as it relates to establishing a business connection to launch in the U.S. Their time at Carnegie Mellon University consisted of panel discussions with professionals who specialized in topics such as doing business in the U.S. regarding immigration law, intellectual property issues and business development. The Portuguese companies also had the opportunity

to collaborate with university professionals regarding resources that are available through Carnegie Mellon University.

In addition to the panel sessions, the companies participated in the Innovation Happens session which was hosted by AlphaLab on the south side of the city. During the Innovation Happens sessions the companies made sales pitches to potential investors and companies with common interests. Collectively, the Portuguese companies made pitches to approximately 37 companies. The Innovation Happens session is a common practice at CMU through Project Olympus and the goal is to provide networking events, connecting entrepreneurs and large corporations; encourage entrepreneurs to focus more on getting the customer and create a culture of "buying local" in Pittsburgh.

Following the Innovation Happens session, the four companies met individually with potential customers, investors, and clients for 1.5 days. The meetings were tailored specifically to the interest of the Portuguese companies. Collectively, the four companies had 18 individual meetings.

- ObservIT met with the following companies: Property Management DDR, PittPatt/Google, and Property Management Echo Realty.
- Faces.in met with the following companies: Partner, Swallow Point Ventures, Read Write Web, Jibbago, and Flashgroup.
- Treat U met with the following companies: EVP Corporate Operations and Finance, Regulatory and Quality Solutions LLC, UPMC HealthPlan, Pittsburgh Life Sciences Greenhouse, and Hillman Cancer Center.
- FeedZai met with the following companies: WESCO, Equitable Gas, Emerson Process Management, Mike Vargo and Global Business Development.

Each meeting was held with high level executives including Presidents, Chief Operations Officer, Senior Vice Presidents, Chief MD, Vice President of Operations, Chief Executive Officers, and Chief Information Officers.

The visit concluded with an International Company Showcase which provided the Portuguese companies with a glimpse of the international entrepreneurship scene. At the showcase, they made presentations regarding their start-up companies and the importance/impact of launching their businesses in the United States. Following the presentation a group of 22 continued the conversation over dinner. The group consisted of business owners, potential clients and investors.



## 4.5 International Partners

### ● UT Austin | Portugal

The University of Texas at Austin  
Austin, Texas, United States of America  
[www.utaustinportugal.org](http://www.utaustinportugal.org)

Established by the Texas constitution in 1876, The University of Texas System consists of nine academic universities and six health institutions. The University of Texas at Austin, the flagship of the UT System, enrolls about 50,000 students, making it one of the largest universities in the world. UT Austin has 16 colleges and schools with 2,500 faculty and annual research funding of over \$500 million. Its mission and core purpose: To transform lives for the benefit of society through the core values of learning, discovery, freedom, leadership, individual opportunity and responsibility <http://www.utexas.edu>.

The UT Austin | Portugal International Collaboratory for Emerging Technologies (CoLab) was launched by the Portuguese Science and Technology Foundation (FCT) on March 22, 2007 as part of a national strategy to promote Portuguese scientific and technological capacity and to reinforce the status of Portugal's scientific institutions at an international level. The five-year collaboration is working to increase the excellence of Portuguese research and postgraduate studies in emerging state-of-the-art research and education with particular emphasis within and across academic programs in advanced digital media and mathematics. CoLab also supports The University Technology Enterprise Network (UTEN) that is the focus of this annual report. The intention is to strengthen collaborative research and advanced education in the short term as well as to institutionalize these collaborative programs so they are sustainable.

### ● MIT | Portugal

Massachusetts Institute of Technology CoLab  
Boston, Massachusetts, United States  
[www.mitportugal.org](http://www.mitportugal.org)

The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21<sup>st</sup> century.

The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world's great challenges. MIT is a world-class educational institution. Teaching and research, with relevance to the practical world as a guiding principle, continue to be its primary purpose. MIT is independent, coeducational, and privately endowed. Its five schools and one college encompass numerous academic departments, divisions, and degree-granting programs, as well as interdisciplinary centers, laboratories, and programs of America whose work cuts across traditional departmental boundaries.

The MIT|Portugal Program is an international collaboration seeking to demonstrate that an investment in science, technology and higher education can have a positive, lasting impact on the economy by addressing key societal issues through quality education and research in the emerging field of engineering systems. The program has targeted bioengineering systems, engineering design and advanced manufacturing, sustainable energy systems, and transportation systems and as key areas for economic development and societal impact.

## ● Carnegie Mellon | Portugal

Carnegie Mellon CoLab  
Pittsburgh, Pennsylvania, United States of America  
[www.cmuportugal.org](http://www.cmuportugal.org)

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The organization of strategic events in technology transfer and entrepreneurship areas, with the presence of several speakers from Carnegie Mellon University in Portugal, enabled the creation of critical mass for these areas inside the Portuguese universities. Currently there is a solid bridge between the U.S. university stakeholders, and the Portuguese universities TTO's and even with some entrepreneurs.

Carnegie Mellon University is a global research university of more than 10,000 students, 70,000 alumni, and 4,000 faculty and staff. Recognized for its world-class arts and technology programs, collaboration across disciplines and innovative leadership in education, Carnegie Mellon is consistently a top-ranked university.

The Information and Communications Technologies Institute (ICTI) is a partnership between Carnegie Mellon and several universities and high-tech corporate research groups in Portugal, and Portugal's national science and technology foundation, the FCT (Fundação para a Ciência e a Tecnologia). ICTI offers students unique dual-degree masters and doctoral programs. Graduates are conferred degrees from Carnegie Mellon and the partner Portuguese institution. The intellectual focus and theme of the Carnegie Mellon|Portugal partnership is information and communication technologies, broken out into four broad areas:

1. Information processing and networking
2. Sensing technologies & networking
3. Technology, management & policy
4. Basic sciences including applied mathematics.

## ● Fraunhofer | Portugal

Fraunhofer-Gesellschaft  
Munich, Germany  
[www.fraunhofer.pt](http://www.fraunhofer.pt)

The Fraunhofer-Gesellschaft undertakes applied research of direct utility to private and public enterprise and of wide benefit to society. Customers include industry, the service sector, and public administration.

Fraunhofer-Gesellschaft encompasses more than 80 research units, including 60 Fraunhofer Institutes, at different locations in Germany. The majority of the 20,000 staff are scientists and engineers.

The annual research budget totals €1.8 billion. Of this sum, €1.5 billion is generated through contract research. Two-thirds of the research revenue is derived from contracts with industry and from publicly financed research projects. One-third is contributed by the German federal and Länder governments in the form of institutional funding.

Portugal (through the Portuguese Science and Technology Foundation and the Knowledge Society Agency), and the Fraunhofer-Gesellschaft established a long term collaboration focused on emerging technologies, exploring mutual interests in science and technology oriented towards social well-being, economic growth and quality of life.

Fraunhofer Portugal was created to drive the collaboration framework and to establish a new institute in Portugal—FhP AICOS the Research Center for Assistive Information and Communication Solutions, with focus in 2 activity areas: Ambient Assisted Living (AAL) and Information and Communication Technologies for Development (ICT4D). This collaboration will promote continuous and systematic cooperative actions between Fraunhofer Institutes, R&D institutions in Portugal, and customers.





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