

2008-2009 ANNUAL REPORT

UTEN Portugal

University Technology Enterprise Network

Portugal's People, Knowledge, & Ideas
Competing in International Markets with the IC² Institute



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

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1. UTEN strategy: Vision and mission

“UTEN has been launched and sponsored by the Portuguese Science and Technology Foundation to facilitate, lead, and accelerate the commercialization of science and technology from Portuguese researchers, as well as to foster new international joint ventures in science and technology in Portugal and related economic activities for emerging markets worldwide.”

– João Sentieiro, President, Fundação para a Ciência e Tecnologia, FCT

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



The first FCT-sponsored workshop in international technology transfer was organized by UTEN Austin and held at the New University of Lisbon, Costa da Caparica, February 8 - 10, 2009.

1.1 UTEN vision

The Portuguese Science and Technology Foundation (FCT) working with the IC² Institute, The University of Texas at Austin, launched The University Technology Enterprise Network (UTEN) in March 2007 with the vision of building, within five years, a globally competitive and sustainable science and technology (S&T) transfer and commercialization network managed by highly trained Portuguese professionals in close international collaboration. In fulfilling this vision, UTEN is working to accelerate the international commercialization of Portuguese science and technology through the development of skills and professional competence at

home and the leveraging of UTEN partnerships to foster international technology-based entrepreneurship and business development throughout Portugal.

Increasing opportunities for science and technology within increasingly globalized and specialized markets bring new challenges and opportunities to international technology transfer and commercialization. UTEN is working 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.

1.2 UTEN mission

UTEN's mission is to foster entrepreneurial attitudes and international business competitiveness of Portuguese science and technology, facilitating access to market opportunities worldwide. UTEN strives to present new business opportunities to Portuguese scientific communities while also exploring opportunities for research projects with long-term industrial growth potential. Key UTEN activities include:

- Strengthening and sustaining technology transfer networks and collaboration within Portugal and with international partners
- 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
- Promoting active support and mentoring for select and globally competitive Portuguese business ventures as well as the national and international promotion of technology portfolios from Portuguese research centers and universities
- Enabling stakeholders to support leading-edge S&T commercialization practices including international patenting and globally networked entrepreneurship

1.3 UTEN strategy

UTEN's strategy is based on building sustainable partnerships and networks among technology transfer and commercialization experts and centers within Portugal (UTEN Portugal) and internationally through the IC² Institute, the University of Texas at Austin (UTEN Austin) and overtime with additional experts and centers of technology commercialization worldwide 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 and business as well as civic organizations
- Provide productive and sustainable international networking opportunities for Portuguese technology transfer managers and staff and for technology-based companies and start-ups
- Deepen Portuguese understanding of the challenges and opportunities of university-based technology transfer and commercialization nationally and globally

- Learn and benefit from national and international experience and case studies on how to successfully promote regionally based, globally networked technology development and commercialization
- Brand Portugal as a creative and innovative country that successfully attracts, educates, and retains world-class research and entrepreneurial talent

Taking the last mile

In networked systems that support many of today's critical services – 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 as well as 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.

Today, after many months, workshops, internships, and case-based discussions, the "last mile problem" of UTEN Portugal is not overcome, but the solutions at hand look promising and have already shown relevant results. 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.



Director for UTEN Portugal (right) is José Mendonça, Professor at the University of Porto and President, INESC Porto; Director for UTEN Austin (left) is David Gibson, Senior Research Scientist and Associate Director of the IC² Institute at The University of Texas at Austin.

“UTEN is a disruptive initiative and a great resource of inspiration for talented Portuguese technology transfer professionals and for the internationalization of technology-based companies that face the hurdles of being in a small country operating on a global scope. It is a key element in nurturing the entrepreneurial spirit country-wide for the upcoming years. UTEN requires a full commitment from the TTOs and their institutions and demands building relationships of mutual trust between them and the research community. I thereby foresee a grand experience for the Portuguese TTOs interacting with top-tiered international professionals and am truly enthusiastic with the contagious energy and synergies that UTEN is creating – in the end, it is all about inspired people!”

– Marco Bravo, Assistant of the Portuguese State Secretary for Science, Technology, and Higher Education



2. Through Portugal and Austin towards a global University Technology Enterprise Network

“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 as well as addressing societal problems in a global context.”

– José Mendonça, UTEN Portugal Director,
Professor, University of Porto and President, INESC Porto

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“Increasing opportunities for science and technology within increasingly globalized and specialized markets bring new challenges and opportunities to international technology transfer and commercialization. UTEN is working to overcome these challenges and access these opportunities.”

David Gibson, UT Austin | Portugal CoLab Director, UTEN Austin Director,
Associate Director of the IC² Institute, The University of Texas at Austin



Portuguese technology transfer and intellectual property managers and staff participate in a UTEN technology commercialization workshop in the IC² Institute Global Classroom, Austin, Texas.


2.1 Portugal: a country of science and technology

Portugal is the European country that has recently witnessed its highest increase in R&D expenditure, representing for the first time more than 1.2 percent of its GDP, equalling or surpassing those levels reached by Spain, Ireland and Italy (see Figures 2.1 and 2.2). The rise in R&D expenditure has been mimicked overall by the business sector, which has doubled such expenses in that period (having reached more than half of the R&D total expenditure).

It is the sector for IT services that reflects the highest percentage of researchers in the business sector, followed by services companies, the equipment industry, financial services and insurance. Data also show a rise, before now

unseen in Portugal, in the number of companies with R&D activities, which have doubled within the last four years. This growth in business sector expenses for R&D reflects the effort from the private sector in following the scientific development and the technology capacity present in Portugal. Portugal offers today 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.

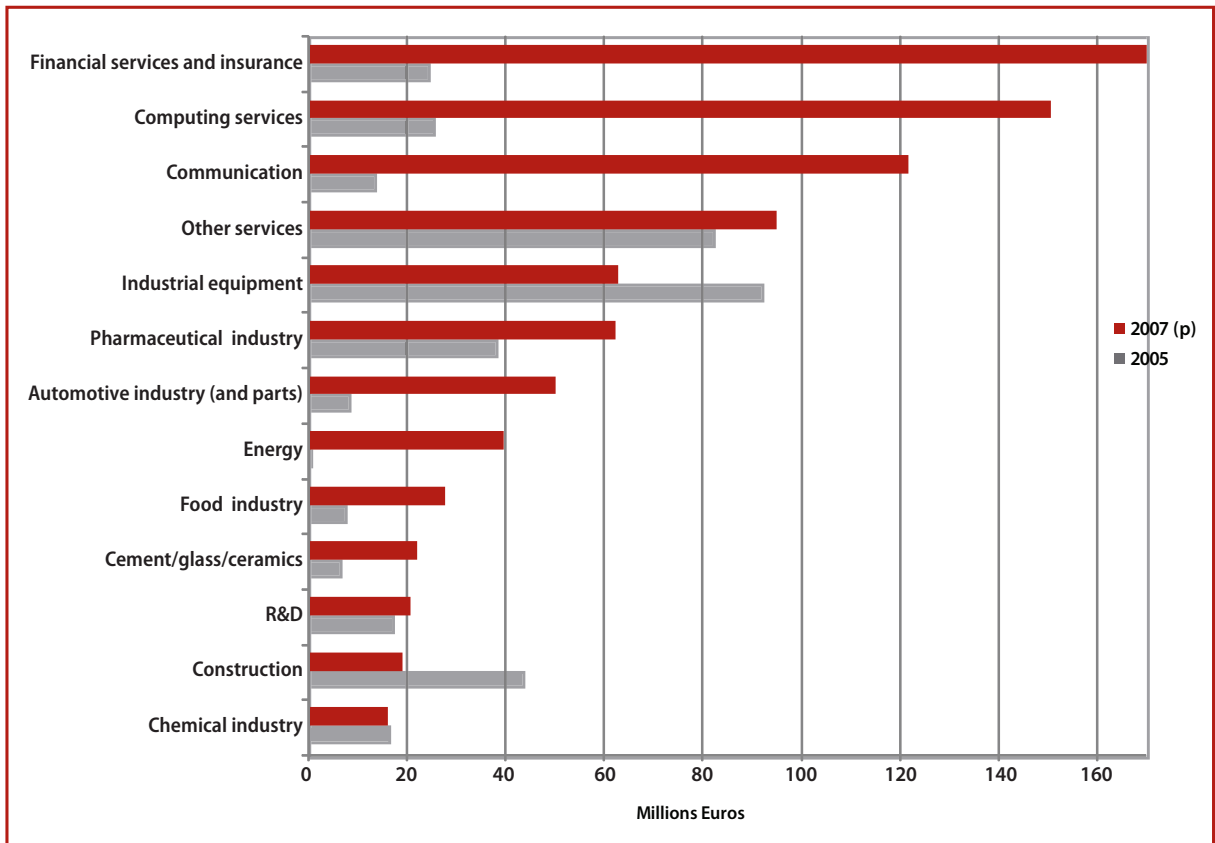
But the increase in R&D expenditure also reflects the policy priority for scientific and technological development, having been followed by a rapid increase in the number of researchers within the labor force, which is nearing the



HEART WAVE MONITOR

VitalJacket®

Figure 2.1 Private expenditure in R&D in the main sectors of activity (2005 and 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). Note: (p) provisional data.

European average, having risen from 3.8% in 2005 to 5% in 2007, i.e., representing one researcher per 200 employees.

The number of researchers in Portugal has doubled in the last ten years, and around 44% are now women (see Figure 2.3). Portugal is today one of a few countries in which the number of males and females working in scientific research is almost at par. The priority given to the rapid scientific and technological development of the country has already been accompanied by a strong mobilization within the scientific community with visible results at an international level. The Portuguese scientific community is young, increasingly internationalized, evenly balanced between men and women, very productive, and in a period of clear growth. The national scientific output rose by 18% during the last 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 from Portuguese authors.

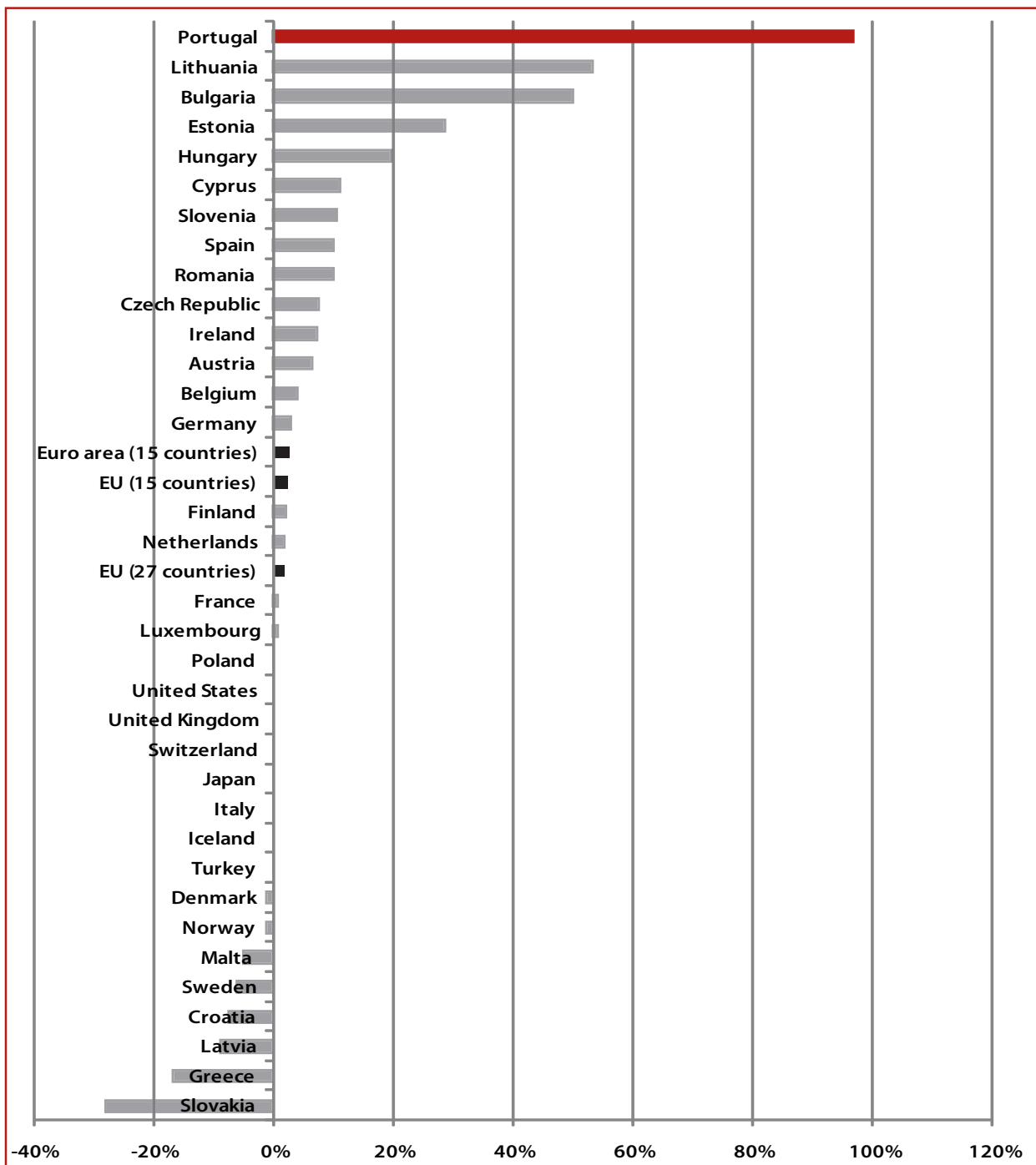
A strong growth has also been seen in recent years in the number of doctorates undertaken and recognized by

Portuguese universities - about 1500 new doctorates per year, around half of which were in the areas of science and technology.

The scientific and technological development in Portugal has also been accompanied by a profound reform of higher education. This reform has 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 has already been accompanied by a process of international growth in academic institutions, specifically stimulated through strategic alliances with institutions of great international significance. The International Collaboratory for Emerging Technologies, CoLab (www.utaustinportugal.org), has been established with The University of Texas at Austin. Other major initiatives include the MIT-Portugal Program in Engineering Systems, with the Massachusetts Institute of Technology (www.mitportugal.org), the Information and Communication Technologies Institute, ICTI, with Carnegie Mellon University (www.cmu.edu/portugal), the Harvard Medical School –

◀ The VitalJacket – a comfortable, mobile heart monitoring device – provides an excellent example of Portuguese ingenuity meeting a market need. VitalJacket is a product of Biodevices, in collaboration with the R&D center IEETA (Instituto de Engenharia Electrónica e Telemática) of the University of Aveiro.

Figure 2.2 Changes in private R&D expenditure as percentage of GDP, 2005-2007

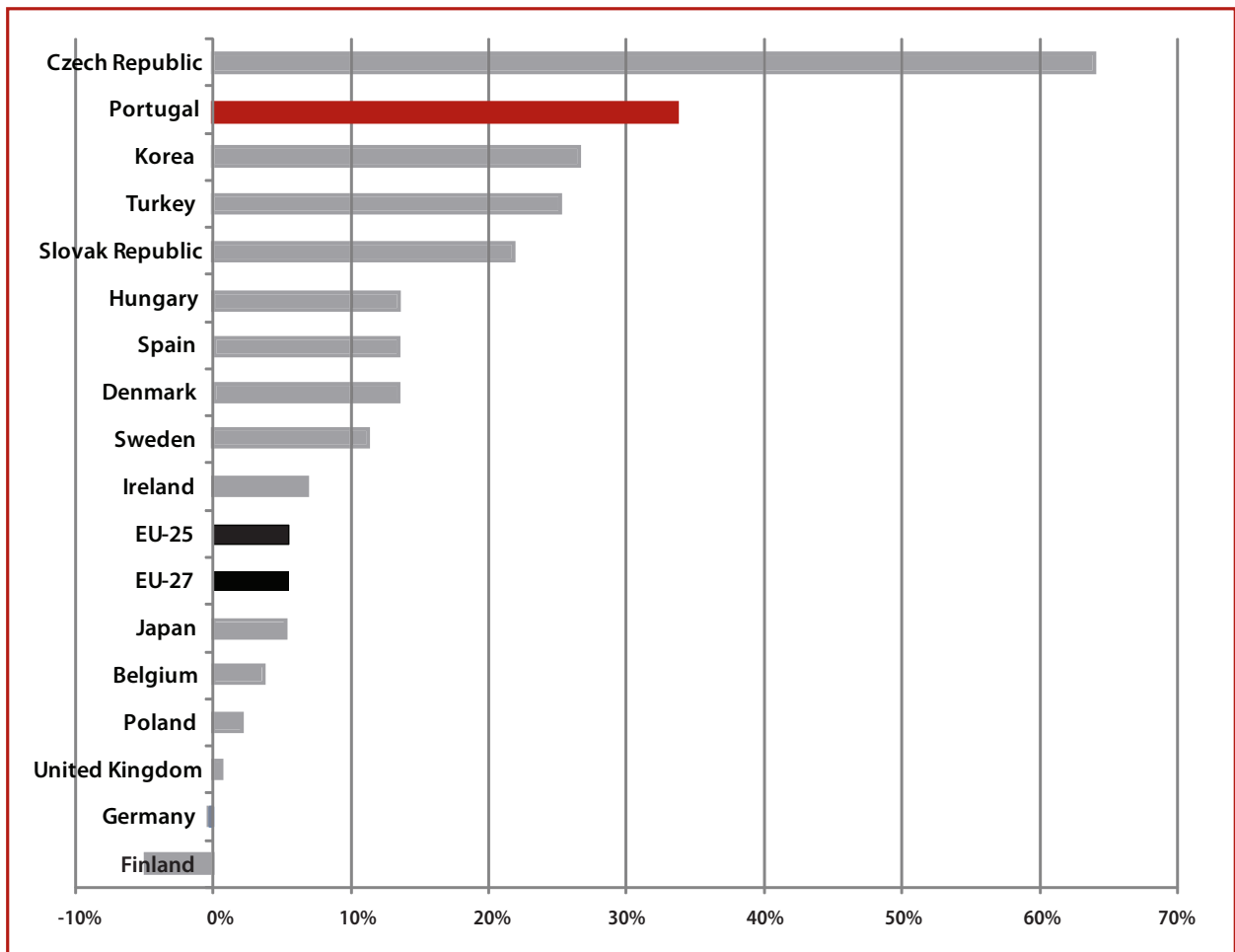


Source: GPEARI / MCTES - Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais / Ministério da Ciência, Tecnologia e Ensino Superior, Inquérito ao Potencial Científico e Tecnológico Nacional (IPCTN).

Portugal Program in Translational Research and Information, (www.hmsportugal.org), and the establishment of Fraunhofer Research Portugal, (www.fraunhofer.pt), through FhP AICOS, the Research Center for Assistive Information and Communication Solutions. 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.

Figure 2.3 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.

2.2 IC² Institute, The University of Texas at Austin, values the UTEN collaboration

In recent years, Portuguese research universities have been working to improve a broad range of technology transfer and commercialization programs and activities, including licensing and spin-outs and the fostering of entrepreneurial environments. Given these resources and opportunities, it is important to work to maximize the economic and social benefits of these investments for Portugal in terms of industrial growth, wealth and job creation, and an increased national competitiveness and quality of life.

The University Technology Enterprise Network (UTEN) was initially conceived and structured by the IC² 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 IC² 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

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INSTITUTE

Attacking "The Gap"



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.

IC² Institute has a 30 year track-record of working with emerging, developing, and developed regions worldwide on how 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 by 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 US and worldwide.

UTEN has provided an invaluable opportunity for IC² Institute to work with talented and dedicated Portuguese academic, government, and business entrepreneurs to effectively use the best of Portuguese higher education, science, and technology and entrepreneurial talent to build wealth and jobs in Portugal and to brand Portugal as a creative and innovative country that can compete internationally and that successfully attracts, educates, and retains world-class talent.

The first year of the UTEN collaboration was devoted to building relationships of mutual understanding and knowledge-sharing among key UTEN participants in Portugal and Austin as well as working with select champions and TTO managers at key Portuguese universities. UTEN Austin Participants traveled to Portugal and worked with TTO managers and staff and entrepreneurs to assess university IP portfolios and to learn about important challenges and expectations of Portuguese TTOs and entrepreneurs. Portuguese TTO managers and select entrepreneurs visited Austin and key Texas partners to initiate collaborative networks for TTO training, internships, and US business development. Working with "living cases" of emerging and successful Portuguese entrepreneurs, UTEN Austin increasingly learned how to best apply IC² Institute know-how to Portuguese realities and to address key challenges to achieving accelerated TT to international markets and commercial applications.

During the second year, UTEN has worked to increasingly structure and formalize a training regime that would effectively build Portuguese TT competencies as well as strengthen networks of collaborators throughout Portugal and with key international partners. In order to learn the key critical TT issues and challenges facing Portugal TTOs and the most appropriate learning opportunities in Texas several extended visits were made by Portuguese TTO managers and staff to Austin and Texas, and UTEN Austin conducted TT workshops in key TT poles in Portugal at TecMinho; INESC Porto, UPIN, and FEUP Porto; IPN Coimbra; and IST and UNL in Lisbon.

The FCT has also instituted a series of seven national UTEN workshops to deepen Portuguese TTO understanding of university-based TT and commercialization from select examples of leading institutions worldwide. Topics include industry-science relations, intellectual property management, and technology transfer to commercialization. The first formal UTEN TTO Training Workshop organized by UTEN Austin was held 18-29 May, 2009 at IC² Institute and included 12 Portuguese TTOs working with UTEN Texas partners and TT offices statewide.

In addition to these training and mentoring workshops, competitively selected Portuguese TT managers and staff are soon to be engaged in two- to three-month internships in select university-based TT offices in Texas ,and in other UTEN Portugal collaborators such as MIT and the Fraunhofer Society. The FCT sponsored and UTEN Austin organized workshops, training, and internships are resulting in the expansion of the active UTEN Portugal network to extend beyond the initial TT poles of Minho, Porto, Coimbra, and IST Lisbon to now include TTO representatives from universities and related institutions in Aveiro; Trás-os-Montes e Alto Douro; INPI, UNL, Inovisa, Fundação Gulbenkian; Algarve; Azores; and Madeira.

In the coming months and years, it is expected that UTEN will successfully train a core group of nationally networked Portuguese TTOs as well as help recruit new Portuguese talent. It is also expected that UTEN Portugal will increase its international S&T commercialization networks to include additional US and EU partners and other universities worldwide with the key objective of building – within and across Portugal – a knowledgeable, globally competitive, and sustainable S&T transfer and commercialization network of highly trained professionals.



3. Networking

“My visit to Austin was to know better the partners that I only knew by the reports my colleagues have been making. People from Porto are very excited with this cooperation with Austin and are deeply involved to strengthen our ties. We have found the colleagues in Texas of an outstanding quality and with a strong will to develop a real cooperation.”

–Jorge Gonçalves, Vice Rector, University of Porto



Professor Steve Nichols (far right), Professor and Senior Fellow of Free Enterprise at The University of Texas at Austin's School of Engineering, addresses the Faculty of Engineering at Porto University in a follow-up to Workshop #1 at UNL.

3.1 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 create and strengthen the "University Technology Enterprise Network" that will:

- Facilitate, lead, and accelerate the commercialization of Portuguese science and technology
- 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

Table 3.1 UTEN workshops & conferences

Date	Subject/Title	Institutional Partners
Workshop #1 8 - 10 February 2009	The practice of technology transfer & commercialization: Exchanging Views with The University of Texas at Austin	<ul style="list-style-type: none"> • School of Science and Technology, The New Univ. of Lisbon • The Univ. of Texas at Austin
Conference #1 4 - 6 March 2009	Human capital and entrepreneurship: The 7 th Interdisciplinary European Conference on Entrepreneurship Research (IECER)	<ul style="list-style-type: none"> • Instituto Superior Técnico, Technical Univ. of Lisbon • Univ. of Regensburg, Lindner Program for Interdisciplinary Entrepreneurship Research
Workshop #2 29 - 31 March 2009	Experiencing technology transfer: Fostering a new dialogue with MIT	<ul style="list-style-type: none"> • Instituto Superior Técnico, Technical Univ. of Lisbon • Massachusetts Institute of Technology
Workshop #3 3 - 5 May 2009	From the lab to the market place: Obtaining strong patents for technology transfer and commercialization	<ul style="list-style-type: none"> • TecMinho, University of Minho • General Electric
Workshop #4 5 June 2009	Disseminating IP knowledge in universities	<ul style="list-style-type: none"> • Univ. of Lisbon • INPI, Portuguese Inst. for Industrial Property • European Patent Academy
Workshop #5 15 - 16 June 2009	Case studies on technology transfer and intellectual property protection	<ul style="list-style-type: none"> • INESC Porto, University of Porto • Fraunhofer Institute
Workshop #6 18 June 2009	UTEN researcher workshop at Innovation Days, Lisbon International Fairgrounds	<ul style="list-style-type: none"> • Innovation Agency (AdI) • FCT, Fundação para a Ciência e a Tecnologia • IC² Institute, The Univ. of Texas at Austin
Workshop #7 20 June 2009	UTEN entrepreneur workshop at at Innovation Days, Lisbon International Fairgrounds	<ul style="list-style-type: none"> • Innovation Agency (AdI) • FCT, Fundação para a Ciência e a Tecnologia • IC² Institute, The Univ. of Texas at Austin
Scheduled Workshops & Conferences		
Conference #2 12 - 14 July 2009	Knowledge networks & international flows of knowledge towards new frontiers in science & technology: 12 th International Conference on Technology Policy & Innovation	<ul style="list-style-type: none"> • INESC Porto and University of Porto • IC² Institute, The Univ. of Texas at Austin
Workshop #8 27 - 29 September	Experiencing technology transfer in Cambridge	<ul style="list-style-type: none"> • University of Algarve • Judge School of Management, Univ. of Cambridge
Workshop #9 8 - 10 November 2009	Experiencing technology transfer with Carnegie Mellon	<ul style="list-style-type: none"> • Instituto Pedro Nunes, Univ. of Coimbra • Carnegie Mellon Portugal Program
Workshop #10 6 - 8 December 2009	Technology transfer & commercialization	<ul style="list-style-type: none"> • CERN • ISQ, Tagus Park-Oeiras Science Park



Workshop #1 8 – 10 February 2009

The practice of technology transfer & commercialization:
"Exchanging views with The University of Texas at Austin"

Hosted by the School of Science & Technology of the New University of Lisbon

In collaboration with UT Austin | Portugal International Collaboratory for Emerging Technologies (CoLab)

Objectives:

- To foster relationships, and to share knowledge and perspectives
- To initiate discussion regarding key national and international challenges to technology commercialization
- To promote new programs including technology transfer training internships
- To lay the foundation for regional and national TTO networks
- To foster globally competitive commercialization in Portugal, including attainment of critical mass and networking of TTOs

Four main topics were addressed:

- Technology transfer
- Capital sourcing and financial management
- IP best practices & entrepreneurship
- On-shoring to US markets

Eight-five participants – including technology transfer and commercialization professionals, technology entrepreneurs and start-up firms – benefitted from interactive analysis of selected Portuguese and US cases from different domains of technology commercialization. Panel discussions, break-out sessions and round tables facilitated open and efficient communication among participants and effective case-based training. Presenters included:

- Erin Defosse, VP of Products & Strategy at Ediomia, Inc.; former director of Austin Technology Incubator (ATI) Wireless (www.ati.utexas.edu)

- Bill Hulse, JD, IP Attorney, HulseIP (www.hulseiplaw.com)
- Laura Kilcrease, Founding Director of ATI; Managing Director of Triton Ventures, Austin, TX (www.tritonventures.com)
- Luis Medina, Director, Technology Business Accelerator (TechBA) at IC² Institute to assist Mexican technology businesses in the US market (www.techbasv.com)
- Steve Nichols, Professor, Senior Fellow of Free Enterprise, College of Engineering, Director of Advanced Manufacturing Center, founding director of the Idea2Product Competition at UT Austin (www.engr.utexas.edu)
- Darius Mahdjoubi, Adjunct Professor of Entrepreneurship and Innovation at UT Dallas, Research Associate at the IC² Institute, UT Austin (www.ic2.utexas.edu)



Portuguese participants meet with UTEN mentors in a breakout session during Workshop #1.

Conference #1 4 - 6 March 2009

The 7th interdisciplinary European conference on entrepreneurship research (IECER), "Human capital & entrepreneurship"

Instituto Superior Técnico (IST), Technical University of Lisbon

In collaboration with the University of Regensburg, Lindner Program for Interdisciplinary Entrepreneurship Research

Objective: To explore current research in entrepreneurship

The 7th Interdisciplinary European Conference on Entrepreneurship Research, IECER (www.iecer2009.com.pt), brought together entrepreneurship scholars from across Europe to present and discuss basic research in business, economics, geography, psychology, sociology or other fields, on the following topics:

- Human capital
- Human resource management in an entrepreneurial context
- Personal and organizational success factors
- Competitive strategies of new ventures
- Context, cognition and decision-making
- Venture capital, finance and banking
- Managing growth and organizational development
- Regional networks and infrastructure
- Employment effects
- Research methodology

The conference was chaired by Rui Baptista, Instituto Superior Técnico. The conference program included a keynote lecture by Maryann P. Feldman, the S.K. Heninger Distinguished Chair in Public Policy at the University

of North Carolina, Chapel Hill, USA. Her research and teaching interests focus on the areas of innovation, the commercialization of academic research and the factors that promote technological change and economic growth. Maryann Feldman's research examines the geography of innovation - investigating why innovation forms spatial clusters and which mechanisms support and sustain industrial clusters.

In her lecture, Maryann Feldman examined how innovation strategy influences firms' level of involvement with university-based research. Her results suggest that firms with internal R&D strategies more heavily weighted toward exploratory activities allocate a greater share of their R&D resources to exploratory university research and develop deeper, multifaceted relationships with their university research partners. In addition, firms with more centralized internal R&D organizations spend a greater share of their R&D dollars on exploratory research conducted at universities. In contrast to other external partners, she finds evidence suggesting that universities are preferred when the firm perceives potential conflicts over intellectual property.

Workshop #2

29 – 31 March 2009

Experiencing technology transfer, “Fostering a new dialogue with MIT”

Hosted by Instituto Superior Técnico, Lisbon

In collaboration with Massachusetts Institute of Technology (MIT) | Portugal Program
and with the Luso American Foundation (FLAD)

Objectives:

- To share MIT’s experiences
- To train and mentor less experienced attendees
- To encourage cross-group communication & learning among all Portuguese participants

The second UTEN Workshop brought MIT experts to discuss technology transfer and commercialization, and to explore successful case studies of technology-based university spin-out companies. This workshop attracted more than 70 participants from technology transfer officers to researchers, college professors, and technology-based entrepreneurs.

The workshop provided a strong, practical educational component that focused on commercializing and transferring technologies from the university to industry, and was divided into three parts:

- Stimulating knowledge creation & entrepreneurial activities
- Building and supporting entrepreneurial activity and academic/industry collaboration
- Reaping the benefits of knowledge creation

Attendees exchanged ideas, and established connections as they continued the UTEN workshop series. Case

studies of three successful Portuguese university spin-out companies were presented: Outsystems, represented by Paulo Rosado; CEV, represented by Sara Monteiro; and Critical Materials, represented by Gustavo Dias.

MIT presenters included Dan Roos (Director of MIT|Portugal), Tony Knopp (Senior Industrial Liaison Officer, MIT’s Industrial Liaison Program), Charles Cooney (Professor of Chemical and Biochemical Engineering), Lita Nelson (Director Technology Licensing Office), Ken Morse (Senior Lecturer, Managing Director, MIT Entrepreneurship Center), Karl Koster (Executive Director, MIT Office of Corporate Relations/Industrial Liaison Program), and Jack Oldham (Director, Foundation Relations & Academic Development Support). Portuguese experts included Teresa Mendes (Pedro Nunes Institute), José Carlos Caldeira (INESC Porto), Susana Barreiros (Universidade Nova de Lisboa – New University of Lisbon), António Cunha (University of Minho), Carlos Matos Ferreira (Instituto Superior Técnico) and Carlos Costa (FEUP).

The audience for the second UTEN workshop was drawn from UTEN’s nationwide network of 15 Portuguese universities, technology parks, and incubators -- as well as select Portuguese intellectual property (IP) professionals and civil servants. In the foreground, below, is Karl Koster, Executive Director, MIT Office of Corporate Relations/Industrial Liaison Program, and Dan Roos, Director of the MIT | Portugal Program at MIT.





An important aspect of the workshop series is the ability to network with both national and international talent. These participants discuss patent protection following Workshop #3.

Workshop #3

3 - 5 May 2009

From the lab to the marketplace:

Obtaining strong patents for technology transfer and commercialization

Hosted by TecMinho, University of Minho, Guimarães

In collaboration with General Electric

Objective: To increase participants' understanding of patent licensing

A strong and enforceable patent is essential for the protection of important technology for commercialization. This hands-on workshop focused on the necessary working knowledge from a legal perspective related to several important issues in the preparation and prosecution of patent applications, including:

- Patentability
- Patent searches
- Preparation of strong and enforceable patent applications

- Claim and specification drafting
- Invalidity, infringement, and licensing

The role that inventors and other persons involved in the creation of new technology, such as technology transfer professionals, was discussed so as to assure the development of the needed legal protection for a successful product. Lecturers included:

- Mardson Q. McQuay, General Electric
- Remus Fetea
- Steve DuBois, Potomac Group, US

Workshop #4

5 June 2009

Disseminating IP knowledge in universities

Hosted by University of Lisbon,

Organized by the European Patent Academy

In collaboration with INPI, Portuguese Institute for Industrial Property

Objective: To explore the role of academia in intellectual property awareness & development

The roving workshop "Disseminating IP Knowledge in Universities" provided a high level panel of presenters with diverse backgrounds who engaged in a fruitful discussion with the audience about the different IP contexts in the international setting. An important conclusion was that an IP culture can provide a positive effect on university research. There was evidence sustaining an absolute need for IP-related training integrated within university curricula at the global level. The social acceptance of IP rights in universities should be diffused and reinforced. There was definitely a high variety of approaches in regards to IP teaching across different countries and universities. Some

presenters further suggested the benefits of developing courses in partnership with the European Patent Academy, as well as with the national offices. IP was defined to be a vital element for a modern knowledge-based economy, and university faculty are germane in developing such an IP societal awareness. A number of differences in the national and institutional approaches to IP rights were identified. An imperative outcome stressed the need for universities to have technology transfer offices with a high level of IP culture, which in turn facilitates the commercialization of IP and transforming ideas into assets resulting in innovative technologies for the marketplace.

Manuel Heitor, Portugal's Secretary for Science, Technology, and Higher Education, addresses the importance of Portugal's universities having technology transfer offices with a high level of IP culture and competence.



Workshop #5

15 - 16 June 2009

Case studies on technology transfer and intellectual property protection

Inesc Porto, Círculo Universitário do Porto, Porto

In collaboration with Fraunhofer Portugal

Objective: To discuss Fraunhofer's experience in technology transfer and IP protection

Over 50 professionals - among technology transfer officers, incubator managers, and entrepreneurs - participated in UTEN Workshop #5, which took place in Porto, from June 15 to June 16. The workshop opened with a presentation of the Fraunhofer model. After the opening remarks, Annette Braun (Director of International Business Development at Fraunhofer) introduced the Fraunhofer Model, followed by Dirk Elias (Executive Director of Fraunhofer Portugal), who presented Fraunhofer Portugal.

This session concluded with two presentations: "Stimulus budgeting - the Fraunhofer Financing Model and how it rewards industrial collaboration," by Torsten Nyncke (Program Manager Portugal) and "Bringing knowledge to the customer-Practical experiences from contract research for industry," by Sabine Krieg (Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB).

The workshop's second session focused on the legal aspects of IP management and research contracts, where "The role of IP in research organizations," "Research

commercialization through licensing technology," and "The research contract" were discussed by other Fraunhofer experts: Lorenz Kaiser (Division Director of Legal Affairs) and Gisela Kern (Fraunhofer Legal Affairs).

The second day of the workshop was dedicated to a third session: "Technology transfer mechanisms and policies." Annette Braun opened with "Strategic planning of new patents and technologies at a Fraunhofer Institute," followed by Roman Götter (Managing Director of the Fraunhofer Academy) who discussed "Training for specialists and managers - The Fraunhofer Academy" and Patrick Hoyer (Fraunhofer Research Planning), who introduced the "Fraunhofer Innovation Clusters" regarding research-industry collaboration. Finally, Andreas Aepfelbacher (Fraunhofer Venture Group) and Dirk Elias presented "Technology transfer through spin-off companies." Following the tradition of the previous workshops organized by UTEN, after each presentation participants were encouraged to ask questions and discuss the themes with the Fraunhofer experts.





In addition to the workshops presented at Innovation Days, the UTEN Austin team provided individual sessions for entrepreneurs and researchers at the UTEN Portugal booth. Above, both Heath Naquin and Tom Gardner work one-on-one with Portuguese entrepreneurs.

Workshop #6 18 June 2009

UTEN researcher workshop

At Innovation Days, FIL (Lisbon International Fairgrounds)
Funded by FCT, Fundação para a Ciência e a Tecnologia

Objective: To increase researchers' understanding of technology transfer options

UTEN Austin presented a three-hour workshop for researchers on technology transfer and commercialization at Innovation Days. About 50 attendees heard from UTEN Austin staff and a Portuguese tech transfer/researcher panel on best practices in dealing with technology transfer offices in universities, and how researchers can best move their technologies toward licensing and commercialization. The workshop was led by the UTEN Austin team of Cliff Zintgraff, Heath Naquin, and Tom Gardner.

Workshop #7 20 June 2009

UTEN entrepreneur workshop

At Innovation Days, FIL (Lisbon International Fairgrounds)
Funded by FCT, Fundação para a Ciência e a Tecnologia

Objective: To increase entrepreneurs' ability to address international markets

UTEN Austin presented a three-hour workshop for entrepreneurs on global market strategy and global market assessment at Innovation Days. About 45 attendees heard from UTEN Austin staff on global strategy, learned about rapid market assessment techniques, and conducted an overview of a global market assessment during the workshop. The session was led by the UTEN Austin team of Cliff Zintgraff, Heath Naquin, and Tom Gardner.



Visiting Austin in April 2008, are CoLab and UTEN Portugal's José Mendonça, Maria José Francisco, Marco Bravo, Pedro Madeira, Ana Paula Amorim, and Maria Oliveira – working with Laura Kilcrease, IC² Institute Fellow, Founding Director of ATI, and Managing Director of Triton Ventures.

3.2 Continuous networking

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), 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

During 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 US market. Visits to UTEN partners in Texas included:

- *In Austin* - Austin Technology Incubator, UT Austin Office of Technology Commercialization, and Greater Austin Chamber of Commerce (www.austinchamber.com)
- *In Dallas* - UT Dallas' Institute for Innovation and Entrepreneurship (<http://innovation.utdallas.edu>), Office of Technology Commercialization, and Arts & Technology Institute (<http://atec.utdallas.edu>)
- *In San Antonio* - UT San Antonio's Center for Innovation, Technology Entrepreneurship (<http://business.utsa.edu/entrepreneur>), INCELL Corporation (www.incell.com), and TEKSA (www.teksa.net), STTM

During these visits UTEN Portugal guests met with faculty and business professional experts that work with UTEN Austin to provide advice, mentoring, internships, and US networking opportunities concerning such issues as US-Portugal technology marketing, university-industry partnerships in technology commercialization, bootstrapping and Business Angel Funding, technology valorization and business development, and technology



Mary Pat Moyer, IC² Institute Fellow and CEO and Chief Science Officer of Incell (San Antonio, Texas), gives a company tour to TTO Fátima Ramalho and Jorge Gonçalves, Vice Rector, University of Porto, with ATI Biosciences Director Jessica Hanover.

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); James Janowiak, President and founder, TEKSA Innovations; Renee White, President, Caduceus Technology Partners (www.caduceustechnology.com); and Cliff Zintgraff, President, Innology LLC (www.innology.com) and UTEN UT-Austin Program Manager. Visits were made to Lisbon, Oeiras, Coimbra, Porto, Maia, and Guimarães, hosted by:

- Taguspark (www.taguspark.pt), Oeiras, Carlos Freire
- The itechpartner MedTech Conference, Coimbra

- UPIN (<http://upin.up.pt>) University of Porto, Maria Oliveira
- TecMinho (<http://www.tecminho.uminho.pt>) University of Minho, Marta Catarino and Ana Paula Amorim
- Instituto Superior Tecnico (<http://www.ist.utl.pt>), Maria Jose Francisco

September 2008

TTO training: University of Porto Vice Rector Jorge Gonçalves and TTO Fátima Ramalho

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 (www.incell.com). While in Austin and San Antonio they also explored opportunities for developing projects through international funding resources and partnering with US organizations.

Entrepreneurial training: Nuno Osório

Nuno Osório, a PhD candidate in the Life and Health Sciences Research Institute at the University of Minho, visited Austin and San Antonio for entrepreneurial training.



Cliff Zintgraff, Program Manager for UTEN Austin, and Luis Mira with INOVISA, work with UAVision's Nuno Simões and Philp Encarnação to help them analyze the market potential and US market opportunities.

His objective was to receive mentoring and expert advice on the market potential in the US for his research, how to conduct clinical trials, and how to file a provisional patent. He succeeded in obtaining information about funding and market-specific opportunities while also establishing valuable network contacts, which may evolve into important collaborators and advisors.

Business development, "Living Cases": Fluidinova

José Carlos Lopes, CTO and Founder of Fluidinova, and Daniela Correia, NanoXIM Marketing Manager, visited Austin in September 2008. Fluidinova is one of the Portuguese companies identified as a pilot candidate or "living case" for business development in the US. Fluidinova has developed technology for artificial bone and biocompatible materials for which the US represents a very significant market. The company visited Austin in order to explore the potential for expanding into the US and establishing facilities in Texas.

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:

- Alexandre Alves, Coordinator, Intellectual Property Unit, Foundation Luis de Molina / University of Évora
- Pedro Coelho, Coordinator of R&D and Innovation, Faculty of Engineering, University of Porto
- Carlos Freire, Incubator Manager, Taguspark
- Telmo Machado Vilela, Advisor to the Board, INPI
- Filipe Neves, Projects Manager, IPN Incubator
- José Paulo Rainho, Coordinator, Technology Transfer Office, University of Aveiro

October 2008

UTEN Austin visits Portugal

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



Portuguese TTO managers visited Austin in December 2008 (whose names are listed on page 26). One of their destinations was the Austin Technology Incubator, along with UTEN Austin team members Heath Naquin, David Warwick, Cliff Zintgraff, and Tom Gardner.

The objective of the visit was to further the strategy for the creation of a sustainable technology transfer system in Portugal through network building.

In Austin, the team attended training on market-based entrepreneurship, learned about government-sponsored and private funding opportunities and models, visited with technology transfer staff from UT's Office of Technology Commercialization, and visited with entrepreneurs, venture capitalists, business angels, IP lawyers, and professors from the IC² Institute's Master of Science in Technology Commercialization program.

In San Antonio, the group visited a regional technology accelerator, an innovation institute at UT San Antonio, a regional technology transfer office connected to the UT Health Science Center in San Antonio, and a private biotechnology incubator. In Dallas, the Institute for Innovation and Entrepreneurship (IIE) discussed its commercialization model and presented commercialization cases. Among UT Austin, UT San Antonio, the UT Health Science Center at San Antonio, and UT Dallas, about \$800 million in research is performed annually.

March 2009

UTEN Austin's Program Manager visits Portugal

From March 23 to March 31, Cliff Zintgraff, UTEN Program Manager, visited universities throughout Portugal advancing technology commercialization training efforts. Visits were made to technology transfer offices and with researchers, inventors, and entrepreneurs at the University of Aveiro, University of Porto - UPIN, University of Porto – Faculty of Engineering, University of Coimbra, University of Minho, and the Institute of Molecular Medicine in Lisbon. During the trip, technology transfer officers were trained on the assessment techniques used by the UTEN program, specifically the RapidScreen and MarketLook assessments used to review Portuguese research, emerging ventures, and spin-offs. The focus of this trip was on early stage research that is just entering the commercialization process. Technologies identified were candidates to become "living cases" in the UTEN program, working with the TTOs to perform joint commercialization assessments of the technologies. The assessment training and living cases are part of UTEN's larger strategy for training TTOs, researchers, and others who contribute to the technology transfer system in Portugal.



4. Training of technology transfer and commercialization professionals

“UTEN Austin designs programs to meet the practical knowledge and skill-building needs of front-line, technology commercialization professionals in Portugal. The talent and commitment of the TTO researchers and entrepreneurs are amazing, and knowledge is disseminating. It is a distinct pleasure to be part of such a strong movement to achieve technology commercialization leadership in Portugal and around the globe.”

– Eli D. Mercer, UTEN Austin Program Manager for Training and Internships



At the IC² Institute, Rick Friedman, Associate Director of UT Austin's OTC, and David Gibson, UTEN Director, review the week's training agenda with Dina Chaves (INPI), while in the background, Eli Mercer works with Filipe Castro (Univ. of Porto) and Pedro Silva (TecMinho).

4.1 UTEN internships 2009

An important UTEN component is the training of technology transfer officers and managers. US Training programs and internships in the US 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 US and across Portugal
- Observe US 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 US. 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 of these internships were initiated in May 2009 at the IC² 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.

Following the two week training session, the interns will be placed for on-the-job training in universities or companies across the Central Texas region. In August 2009 the interns will reconvene for another two-week training phase to expand on the summer's research, culminate the learning process, and determine next steps for each individual to best benefit from the internship. Individual UTEN internships will also be supported by the Massachusetts Institute of Technology, the European Space Agency, and Fraunhofer-Gesellschaft. Over time, internship programs will be expanded to additional international locations. Table 4.1 provides an overview of UTEN internships awarded by the FCT for spring 2009; individual intern profiles follow.

“The UTEN internship has been a remarkable experience. Skilled professionals and professors have showcased the technology transfer & commercialization reality of Texas. We were trained in methods and processes that will allow us to better run TTOs within our universities. We interacted with the most important research centers of The University of Texas System including Austin, Dallas, and San Antonio. Their practices are incredibly fruitful, yet with different approaches that provide us with examples against our differing realities and contexts in Portugal. This has been a big opportunity to improve our skills and make our work more valuable within our universities and the economy as a whole.”

– Filipe Castro, University of Porto, University of Porto Innovation (UPIN)

Eli Mercer, UTEN Austin's Program Manager for training and internships, developed the UTEN Technology Transfer Training (T3) program presented in Austin in May 2009. Speakers were drawn from OTCs across the state of Texas to provide a wide array of experience and insight into technology transfer and commercialization processes.



Table 4.1 UTEN internships: Spring 2009

Intern/Affiliation	Host institution (planned)
Hugo Barros University of Algarve	The University of Texas at Austin's Austin Technology Incubator (IC ² Institute)
Filipe Castro University of Porto	The University of Texas at Austin's Office of Technology Commercialization and Austin Technology Incubator (IC ² Institute)
Marta Catarino TecMinho, University of Minho	The University of Texas at Austin's Office of Technology Commercialization
Dina Chaves INPI, Portuguese Inst. Industrial Property	The University of Texas at Austin's Austin Technology Incubator
Antonio Cunha Instituto Pedro Nunes	Fraunhofer Institute
Jorge Figueira University of Coimbra	The University of Texas at Austin's IC ² Institute
Alexandra Marques University of Algarve	The University of Texas at Austin's Office of Technology Commercialization
Carla Mascarenhas Univ. de Trás-os-Montes e Alto Douro	Texas A&M's Office of Technology Commercialization
Miguel Moura INPI-PT	The University of Texas at Austin's Office of Technology Commercialization
Maria Oliveira University of Porto	(TBC) Massachusetts Institute of Technology's Technology Licensing Office
Nuno Osorio ICVS University of Minho	The University of Texas at Austin's IC ² Institute
Ana Pinto Universidade de Aveiro	(TBC) Massachusetts Institute of Technology
Margarida Prado Instituto Gulbenkian de Ciência	Fraunhofer-Gesellschaft
Rita Remigio University of Aveiro	HulseyIP Law Firm, Austin, Texas
David Resende Universidade de Aveiro	The University of Texas at Austin's IC ² Institute
Luis Serina MCTES/FCT	European Space Agency
Pedro Serrão Universidade da Beira Interior	The University of Texas at Austin's IC ² Institute
Marlos Silva Universidade de Aveiro	The University of Texas at Austin and (TBC) Massachusetts Institute of Technology
Pedro Silva TecMinho, University of Minho	The University of Texas at Austin's Office of Technology Commercialization
Sofia Vairinho University of Algarve	HulseyIP Law Firm, The University of Texas at Austin's OTC
Isabel Veiga INOVISA	The University of Texas at Austin's OTC, IC ² Institute; Innology LLC



Hugo Barros

University of Algarve (UAlg)
Algarve Regional Centre for Innovation (CRIIA)
Host: The University of Texas at Austin

Key Interests

- » Entrepreneurship
- » Business development
- » Capital sourcing
- » Licensing
- » Technology commercialization

Background & Experience

- » Degree in Economics (UAlg)
- » Masters degree in Innovation and Entrepreneurship (in progress)
- » Project Manager at CRIA / UAlg:
 - Support of knowledge-based entrepreneurship
 - Technology transfer and U-E cooperation
 - Promotion of U-E encounters
 - National and international program funding solutions & applications
 - Technology commercialization (patent and utility models)
- » Research and Service activities at UAlg:
 - Promotion activities of technology and knowledge transfer
 - Manager of the UAlg Technology Marketplace: Technology Offer and Demand
 - Editing and updating of Ualg online technology catalogue
 - Evaluation of new technology based spin-offs
 - Manager of the National Technology Marketplace: Technology Offer and Demand from AdI at UAlg
 - Identification of technological and knowledge demand within the enterprises of Algarve; establishing of cooperation, consortiums and services with R&D centers



Filipe Castro

University of Porto
UPIN (University of Porto Innovation)
Host: The University of Texas at Austin

Key Interests

- » Entrepreneurship
- » Licensing
- » Business development
- » Capital sourcing
- » Intellectual property

Background & Experience

- » MIETE - MSc in Innovation and Technological Entrepreneurship, U. Porto
- » Technology Entrepreneurship Manager at UPIN
- » "Licenciatura" Sociology of Organisations, U. Minho
- » NAVE: Support to entrepreneurship and management, CRL., Guimarães; Manager and co-owner of Velha-a-Branca; Cultural Activities, CRL, Braga
- » Consultant for U. Minho/Environment Regional Administration, Azores, under the Sustainable Development Plan (PReDSA)
- » Human Resources and Training in Expoente: S.A., Braga
- » English skills: Frequent Intermediate studies, U. Porto

In addition to group workshops and sessions, each intern was provided one-on-one assistance with development of an individual technology portfolio and overall internship plan. James Jarrett, IC² Institute Senior Research Scientist, is pictured here, working with Alexandra Marques. ►



Marta Catarino

TecMinho
University of Minho
Host: The University of Texas at Austin

Key Interests

- » TTO Management
- » Licensing and negotiation
- » Spin-off support methods and models

Background & Experience

- » Degree in Biological Engineering and Post-graduation in Environmental Technologies
- » Technology Transfer Director at TecMinho, interface of University of Minho
- » Nine years' experience in transnational technology transfer and European project management
- » Extensive international communication experience in Europe, Asia and Africa
- » Member of the Board of Management of TII, European Association of Innovation Management and Technology Transfer Professionals



Dina Chaves

INPI
Host: The University of Texas at Austin

Key Interests

- » Valorization of intellectual property
- » Evaluation of early stage technologies
- » Drafting & negotiation of tech transfer agreements
- » Royalty % determination
- » Marketing of technologies

Background & Experience

- » Degree in Sociology
- » Post-graduate work in Consumer Law
- » MS in globalization
- » IP and Tech Transfer Coordinator, Madan Science Park, New Lisbon University
- » Senior Officer, Portuguese Industrial Property Office
- » Member of international networks addressing the issues of technology transfer and PIR
- » Author of several papers about IP and the valorization of R&D results within an academic context; participation in several conferences, workshops, and advanced courses





Antonio Cunha

Instituto Pedro Nunes

Host: Fraunhofer Institute

Key Interests

- » Technology transfer activities (technology search, market opportunities evaluation, negotiation, contracts, and transference of the information to the companies)
- » Applied research in ambient assisting living, and intelligent transport systems
- » Technology transfer to third world countries to enterprises & spin-offs

Background & Experience

- » Electrical Engineering degree
- » Masters Degree in Innovation and Knowledge Management
- » Sub Director of Laboratory of Automatics and Systems, Pedro Nunes Institute
- » Develop of electronic instrumentation and automation
- » Coordinate the Technology Transfer Process related with the IPNlas research
- » Technology transfer projects include NacSys, iTHcontrol, Cybermoving



Jorge Figueira

GATS.UC – Univ Coimbra KTO

Host: The University of Texas at Austin

Key Interests

- » Identifying best practices for commercialization at Portuguese universities
- » Identifying tools for evaluating business potential, that can be adapted for use at the UC's TTO
- » Innovation ecosystem development
- » Enhancing the network with other TTO's
- » Identify possible collaboration for the commercialization in the US

Background & Experience

- » UC's technology transfer unit coordinator:
 - Responsible for interface of UC (at rectory level) with external entities for innovation and technology transfer issues
 - Technology transfer and innovation project manager
 - IP management and commercialization
 - Create community awareness of entrepreneurship, innovation and tech transfer
 - Implement initiatives such as entrepreneurship courses, conferences about innovation and entrepreneurship, etc.
 - Internationalization and networking
 - Participate in and present to international conferences and seminars



Carla Mascarenhas

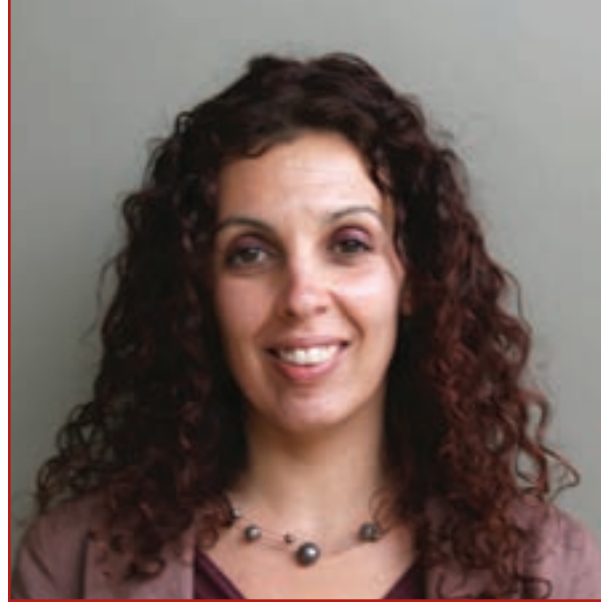
Univ. de Trás-os-Montes e Alto Douro
Host: The University of Texas at Austin

Key Interests

- » Licensing
- » Entrepreneurship
- » Capital sourcing
- » Business development
- » Intellectual property

Background & Experience

- » M.S. in Biology, 2004
- » Technology Entrepreneurship Management at Universidade de Trás-os-Montes e Alto Douro
- » Patents granted:
 - Mascarenhas, P. National 103 668 PAT
 - Mascarenhas, P. National 103 806 PAT
 - Mascarenhas, P. National PAT 103 830
 - Mascarenhas, P. National PAT 103 861
- » Patent applications pending:
 - Mascarenhas, C. National 103 685 PAT09



Alexandra Marques

University of Algarve
Host: The University of Texas at Austin

Key Interests

- » Technology and knowledge transfer – R&D centers to enterprises & spin-offs
- » Technology commercialization
- » Business development
- » Patents & licensing
- » Entrepreneurship
- » Capital sourcing

Background & Experience

- » Ph.D. degree in Ocean Sciences
- » Science and Technology Manager at CRIA / UAlg:
 - Characterization of research and service competencies of UAlg
 - Promote technology transfer activities
 - Manage the UAlg Technology Marketplace: Technology Offer & Demand
 - Edit and update the UALG online technology catalogue
 - Evaluate potential of new technology-based spin-offs
 - Manage the National Technology Marketplace: Technology Offer and Demand, from AdI at UAlg
 - Identify enterprise demand for technologies and knowledge in Algarve: establish cooperation, consortiums and services with R&D centres



Miguel Moura

INPI-PT

Host: The University of Texas at Austin

Key Interests

- » Patent licenses
- » Valorization of intellectual property
- » Promoting TTO/inventor relationships

Background & Experience

- » Degree in Materials Science and Engineering
- » Research Grant, ITN, Portugal, 2006-2007
- » Patent Examiner, INPI, Portugal, 2007- current day
- » Patent examination training at the European Patent Office
- » Training in valorization of IP, IEEPI, France



Maria Oliveira

University of Porto

UPIN (University of Porto Innovation)

Host: The University of Texas at Austin

Key Interests

- » Efficiency of technology transfer offices
- » Management of TTOs
- » Licensing strategies
- » Technology assessment and evaluation skills
- » Entrepreneurship support
- » IP management

Background & Experience

- » Attending MS in Innovation and Technological Entrepreneurship
- » Post-graduate in Management of Science and Technology
- » Degree in Zootechnical Engineering
- » Director of U. Porto technology transfer office (UPIN)
- » European project manager involved in the submission, management, and exploitation of EU R&D projects, Inova+, Porto
- » GMP policy and quality control manager Trouw Nutrition/Spain
- » Management of structural funds allocation, European Commission, Brussels



Nuno Osorio

University of Porto
UPIN (University of Porto Innovation)
Host: The University of Texas at Austin

Key Interests

- » Technology management and policy
- » Medical research: pre-clinical and clinical trials
- » Business development
- » Entrepreneurship
- » Licensing
- » Capital sourcing
- » Patents

Background & Experience

- » Degree in Applied Biology
- » Completing PhD in Health Sciences on genetic model systems and neurodegenerative diseases
- » Responsible for entrepreneurship and technology management for the Domain of Microbiology and Infection, ICVS
- » Teaching assistant in the School of Health Sciences of University of Minho and adjunct professor at the Maia Institute of Higher Education (ISMAI)
- » Cofounder of the project "voxGene: Align your genes with your dreams"



Ana Pinto

Universidade de Aveiro
Host: Massachusetts Institute of Technology

Key Interests

- » University-industry liaison
- » Licensing
- » Intellectual property
- » Entrepreneurship
- » Business development

Background & Experience

- » Degree in Economics, ISEG
- » MS in Economics
- » Assessor of the CEO
- » Member of UATEC, technology transfer office of UA, with experience in:
 - Preparation of business plans and market research for the commercialization of technologies
 - Promotion of the relationship between university and enterprises (R&D in consortia, research contracts, applications of R&D in consortium funds)
 - Promotion of researchers involvement in TT activities



Margarida Prado

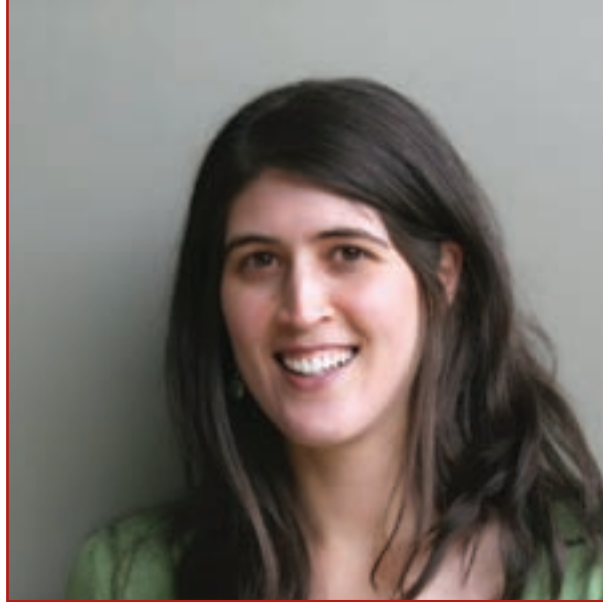
Instituto Gulbenkian de Ciência
Host: Fraunhofer-Gesellschaft

Key Interests

- » Freedom to operate evaluation
- » Market evaluation
- » Negotiation skills
- » Licensing practice
- » Patent strategy
- » Best practices in technology transfer

Background & Experience

- » Degree in Applied Plant Biology
- » PhD in Cell Biology
- » Post-doc in intellectual property in life science: Setting a technology transfer platform for Instituto Gulbenkian de Ciência
- » Training in intellectual property at Parlee McLaws LLP, Edmonton, Canada
- » Internship at the European Molecular Biology Laboratory, Heidelberg, Germany



Rita Remigio

Universidade de Aveiro
Host: The University of Texas at Austin

Key Interests

- » Intellectual property
- » Technology management and transfer
- » Entrepreneurship
- » Capital sourcing

Background & Experience

- » Unit of Technology Transfer of the University of Aveiro – UATEC – Pivot at the Centre for Languages and Cultures.
- » PhD in Linguistics (in completion)
- » Patent: Device and method for systematic access and availability of terminological information of food items with health claims. Titular: University of Aveiro; Inventors: Ana Rita Remígio; Maria Teresa Roberto; Rute Costa. Request no.: 103 987
- » Technology-based entrepreneurship course: Univ. of Coimbra, Aveiro & Beira Interior, and Chamber of Commerce & Industry Centre

“During the initial internship training at Austin, I had the unique opportunity to get acquainted with the Texas scenario in technology transfer and commercialization, through the people and the institutions they represent. The networking, knowledge and skills acquired are of extremely great value to me and to my institution. I am sure these have only been the first steps towards a long and lasting transatlantic relationship and collaboration within the UTEN program.”

–Rita Remigio, Universidade de Aveiro



David Resende

Universidade de Aveiro

Host: The University of Texas at Austin

Key Interests

- » Technology transfer
- » User-driven innovation
- » Entrepreneurship
- » University-enterprise relationships

Background & Experience

- » Assistant Professor, University of Aveiro
- » Masters degree in S&T & Innovation Management
- » PhD



Luis Serina

FCT, Foundation for Science and Technology

Host: European Space Agency

Key Interests

- » Technology-based entrepreneurship
- » Market technology transfer and business development
- » Licensing agreements

Background & Experience

- » Degree in Aerospace Engineering
- » Post-graduate work in engineering policy and technology management
- » Software engineer, developing satellite navigation technology, Skysoft Portugal
- » National contact point for the security and transport themes of the 7th Framework Programme of the European Union, MCTES/FCT
- » Advisor in Portuguese delegation to the European Space Agency in the Telecommunication and Navigation Program boards

UTEN Technology Transfer Training (T³) workshop participants and facilitators, IC² Institute, May 18 - 28, 2009.





Pedro Serrão

Universidade da Beira Interior

Host: The University of Texas at Austin

Key Interests

- » Technology entrepreneurship
- » Technology transfer
- » Enterprise incubation
- » Intellectual property
- » Venture capital

Background & Experience

- » Management degree
- » MBA in entrepreneurship and enterprise creation
- » Tech-based entrepreneurship course
- » Project management and candidacies course
- » Creation and dynamization of tech-based course
- » Management of innovation course
- » Competitive proposal for framework 7



Marlos Silva

Universidade de Aveiro

Hosts: The University of Texas at Austin and
MIT – Massachusetts Inst. of Technology (TBC)

Key Interests

- » Entrepreneurship
- » Licensing
- » Intellectual property
- » Business development
- » Capital sourcing

Background & Experience

- » Master in Accounting and Auditory
- » Doctor in Business Management
- » Project manager / Technology Transfer Officer at University of Aveiro
- » Entrepreneurship specialist at GAPI/grupUNAVE-UA
- » Project Manager at ADI, Portuguese Innovation Agency
- » Technology transfer expert at IRC (Innovation Relay Centre) Portugal
- » Business agent at Caixa Económica Federal

“I'm really looking forward to going back and trying to do things better in my institution. Modules were presented were by TTOs from all over the University of Texas System, and they made me think about how to improve our own activities using new tools, models and, more important, a new attitude. If we can capture this business-oriented attitude, positive results will naturally follow.”

– Marlos Silva, Universidade de Aveiro



Pedro Silva

TecMinho (Universidade do Minho)

Host: The University of Texas at Austin

Key Interests

- » Technology transfer
- » Technology scouting / screening
- » Technology marketing
- » Market look
- » Technology valuation

Background & Experience

- » Technology transfer officer at TecMinho
 - Commercialization of University of Minho R&D results
 - Technology scouting
 - Technology watch
 - Science and technology marketing
 - Partnership implementation
 - Negotiation of license agreements
- » Industry Liaison for strategic partnerships and R&D and innovation projects
- » Operational Management of Innovation Relay Centre Portugal (CPI) , focusing on transnational technology transfer
- » Consultant of more than 300 Portuguese companies in:
 - Innovation management
 - Technology transfer
 - Strategic partnerships
 - Intellectual property rights
- » Operational Management of national and European projects in innovation and regional development under different schemes
- » International experience in providing tech transfer training and as a spokesperson in conferences and workshops (Europe, Uzbekistan)

“The first phase of the UTEN internship proved the huge unlocking potential that this skills development program, concretely – and the whole network, in general – is promising for knowledge transfer and innovation professionals in Portugal. I can already preview the sound outcomes of this program and internship, first by improving a wide set of technical and soft skills, and second by creating long-lasting tight bonds with members and facilitators of the network, especially within the vibrant Texas innovation ecosystem. Knowledgeable, enthusiastic people are at the heart of any sustainable successful development program and this program just has them.”

– Pedro Silva, TecMinho, University of Minho

“Yesterday I had a meeting with Pedro Silva when he was enthusiastically debriefing his first experience in Texas. It was most useful for him. 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.”

– Marta Catarino, Director of Technology Transfer, TecMinho, Universidade do Minho



Sofia Vairinho

University of Algarve

Host: The University of Texas at Austin

Key Interests

- » Intellectual property
- » Licensing and technology commercialization
- » Contracts, confidentiality agreements, and others
- » Negotiations and how to close a deal
- » Incubation
- » Entrepreneurship

Background & Experience

- » Degree in Law (University of Coimbra, and PhD (progress) in business law, at Huelva University, Spain
- » Advisor at CRIA / UAlg, to monitor and register industrial property rights, with emphasis on patents and trademarks/brands, to the academic public and to regional enterprises
 - Creation of the University Algarve IP rights portfolio (55 trademarks and 30 patents)
 - Activities to promote and assist in technology and knowledge transfer, with focus in contract designing and non-disclosure agreements
 - Application for funding on consortium projects between R&D centers and enterprises
 - Participation and representation of CRIA
 - Preparation of written opinions, regulations, statutes, contracts, protocols, agreements and other legal documents
 - Legal creation and monitoring of associations and enterprises related to the Univ. of Algarve
 - Monitor the legal procedure and the implementation of the Algarve Science and Technology Park including incubation
 - Support knowledge-based entrepreneurship technology transfer and EU cooperation
 - Technology commercialization (patent & utility models)



Isabel Veiga

INOVISA

Host: The University of Texas at Austin

Key Interests

- » Technology evaluation
- » Technology valorization
- » University technology surveillance
- » Incubation of technology based companies
- » Business plans for technology based incubators

Background & Experience

- » Technology transfer and IP manager at INOVISA / ISA-UTL
- » ISEG / UTL: Postgraduate course in economics and management of industrial property
- » Advisor of INPI governing board
- » Technology transfer and incubation support at INOVISA
- » INPI: Training in advanced queries in databases of industrial property; training in trademarks and patents in the department of trademarks and patents of INPI
- » Instituto Superior de Agronomia / Universidade Técnica de Lisboa: Degree in Agronomical Engineering

“Working with UTEN is helping 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.”

– Isabel Veiga, INOVISA



“UTEN’s grassroots approach and focus on global markets is a great catalyst for the R&D emerging from Portugal’s universities.”

– Cliff Zintgraff, UTEN Austin Program Manager for business development

5. Technology commercialization

This section presents an overview of early-stage and mature technology-based start-ups in Portugal with relevant university/research links, as analyzed through a major project launched by UTEN in 2008-2009 to improve understanding about knowledge-based firms that have begun entrepreneurial activity in the last decade.¹ Based on an initial identification of emerging start-ups operating in Portugal, all the firms that elected to participate in the review were visited and completed questionnaires about their main competences, skills and available technologies.

Technology-based companies created in Portugal in recent years as spin-offs of the science 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.

The analysis has also shown 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, participating in research consortia and partnering with academics that do related scientific work. Fresh graduates may be important channels for disseminating the latest knowledge from academia to the local industry. New firms are highly likely to start in the home region of their founders. As a result, universities and other research institutions can become important focal points for regional economic development.

The presence of a university in a region is an additional factor influencing the location decision made by new firms. This influence should be greater in industries

where new knowledge plays an important role. The transmission of new and uncodified knowledge tends to occur only within limited geographic areas, embedding resulting economic activity within the region. As a result, it is expected that access to local knowledge sources is particularly significant for high technology and knowledge based manufacturing and services.

Empirical research indicates that it is only a relatively small number of fast-growing new firms that 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. Knowledge-based activities require a steady flow of novel ideas and high levels of human capital in order to flourish. Therefore, one central aspect in the creation and growth of knowledge-based firms is the role played by human capital. Human capital entails the stock of knowledge and skills that reside within individuals and that can be developed over time. The analysis is presented in three parts, namely:

Table 5. A 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

Table 5. B Mature technology-based start-ups in Portugal with relevant university/research links, with emphasis for those created more than five years ago

Table 5. C Main technologies in commercialization by early-stage and mature technology-based start-ups in Portugal

Following each table is a group of brief descriptions of some of the cases studied.

¹Study conducted by Miguel Amaral, Joana Mendonça, Miguel Preto and Pedro Faria, with support provided by UTEN, including that of the IC² Institute experts. See <http://utenportugal.org> for the full report.

Over the years, YDreams has built a reputation as a provider of applied technological creativity in Portugal and abroad. One example is the Adidas Eye Ball. A 6-meter high replica of the Adidas football featuring built-in motion and sound sensors that engage users to interact with numerous Eye Ball contents such as games, sports and weather information, and pastimes, among others. YDreams opened its US headquarters in Austin, Texas in 2007.



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Andrew Lux • Sebastian Schweinsteiger • Uli Becker

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+TEAMGEST

5.1 Early-stage start-up technology companies

Table 5.A. Early-stage start-up technology companies

Examples of early-stage Portuguese technology-based start-ups with relevant university/research linkages

Sector	Ref #	Company	Est.	Spin-out source	Location
Agri/Food	A.1	Cook.Lab	2007	Agri-food and chemical engineers and landscape architect with food education	Lisboa (PT)
	A.2	MicoPlant	2006	Two forest engineers from UTAD and one environmental engineer from Escola Superior Agrária de Ponte de Lima	Gondomar (PT)
	A.3	Natural Concepts - Bioteknics	2007	Researchers from University of Minho	Guimarães (PT)
	A.4	Prosense, Lda	2009	Post-doc and masters researchers	Lisboa (PT)
Bio/Pharma	A.5	Bioalvo S.A.	2005	Post-doc researchers: biotechnology and applied mathematics	Lisboa (PT)
	A.6	Biopremier	2003	Researchers	Lisboa (PT)
	A.7	NZYTEch Lda	2008	Researchers	Lisboa (PT)
	A.8	Stemmaters	2007	PhD graduate and faculty from University of Minho	Guimarães (PT)
Energy/environment/ Sustainability	A.9	Advanced Cyclone Systems, S.A.	2008	Aggregate professor from FEUP; engineer and MBA from Nova University of Lisboa	Porto (PT)
	A.10	Albatroz Engineering	2006	Ex-students and researchers from IST	Lisboa (PT)
	A.11	WSBP Electronics	2008		Coimbra (PT)
	A.12	WS-ENERGIA	2006		Oeiras (PT)
ICT/Sostware/ Digital Media	A.13	AuditMark	2008	A PhD student from FEUP and a researcher at INESC Porto	Porto/Lisboa (PT)
	A.14	Bullpharma	2008		Cascais (PT)
	A.15	ClusterMedia Labs	2008		Aveiro (PT)
	A.16	Critical Links	2006	Former CEO of Critical Software (spin-off from Critical Software)	New Jersey (US)/ Coimbra (PT)/ Southampton (UK)/ Castelfiorientino (IT)
	A.17	Critical Manufacturing	2009	Former researchers of Quimonda (spin-off from Critical Software)	Germany

Technology-based products or services

Links: R&D center/univ.

Molecular gastronomy research, new food products development	Institute of Agronomy (ISA), Technical University of Lisbon
Micogourmet, Micogest, Micogrower produce, develop and commercialize mushrooms	University of Trás-os-Montes e Alto Douro
Controlled production of extracts and fractions with antioxidant, anti-aging and neuroprotective activities, by in-house developed techniques	University of Minho
R&D in sensory analysis of food products	Institute of Agronomy (ISA), Technical University of Lisbon
Global Platform Screening for Drug Discovery (GPS D2) - drug discovery platform based on in vivo assays performed in humanized yeasts	ICAT-School of Sciences, University of Lisboa, laboratory facilities
Diagnosis methods, molecular design (agri-food, clinical)	ICAT-School of Sciences, University of Lisboa, laboratory facilities
Synthetic genes, recombinant enzymes, analytical and diagnostic test kits and molecular biology products	School of Veterinary Medicine, Technical University of Lisbon
Bone/skin regenerative medicine	3B's / University of Minho
Mechanical or electrostatic ReCyclone systems for high efficient particle capture	FEUP / University of Porto / Nova University of Lisboa
Sensors, computers and avionics hardware and software embarked in vehicles to identify automatically and in real-time potential hazards for utility and transportation assets, with emphasis in power-lines	IST / Technical University of Lisboa
Energy analyzer, emissions reporting, S3 web-based service, building performance and automation	University of Coimbra
DoubleSun® Four and Five, Heliots, Solar Trakers (WST1000/1600) Solar concentration technology which integrates precise tracking with 2 X flat reflective optics	
Web campaign auditing, web traffic analysis, browser recon – browsers' identification tool applied to web traffic analysis and auditing	FEUP / University of Porto
Web-platform auction arena	
LiveMeans Engine®, SoundsLike.Me	University of Aveiro
EdgeBOX - Integrated system for internet and communication management, with remote control. Applied to schools and other public and private services. Specific product delivered for PMEs EdgePACKS	
Improve – a new method to master the efficiency of semi-conductors in European industry	

Table 5.A. (continued) Early-stage start-up technology companies

Examples of early-stage Portuguese technology-based start-ups with relevant university/research linkages

Sector	Ref #	Company	Est.	Spin-out source	Location
ICT/Software/Digital Media (cont'd)	A.18	Critical Materials	2008	Post-doc researcher at U. Minho (spin-off from Critical Software)	Guimarães (PT)
	A.19	Edit on web	2003	Physics engineer from University of Coimbra FCTUC	Viseu (PT)
	A.20	EXVA	2008	PhD from University of Minho	Guimarães (PT)
	A.21	FoodInTech	2008	Faculty from FEUP	Porto (PT)
	A.22	Keep Solutions	2008	Faculty from University of Minho	Braga (PT)
	A.23	Metatheke software	2007		Aveiro (PT)
	A.24	NWC network concept	2008	Graduates from IST	Lisboa (PT)
	A.25	Practical Way	2008	Students from FEUP	Porto (PT)
	A.26	SpectralBlue	2008	Invited Professor from University of Minho	Guimarães (PT)
	A.27	Take the Wind	2008	PhD from University of Coimbra	Coimbra (PT)
	A.28	Ubisign, Tecnologias de Informação, lda	2005	Faculty from University of Minho	Braga (PT)
	A.29	Vectrlab, S.A.	2008	Informatics engineer from University of Lisboa	Lisboa (PT)
	A.30	Wizi	2008	Researcher from IST	Lisboa (PT)
	A.31	Xarevision	2007	Researchers from INESC Porto (spin-off from INESC)	Porto (PT)
Medical Devices/Diagnostics	A.32	Biodevices	2006		Aveiro (PT)
	A.33	BlueWorks	2007	Three biomedical engineers, one physician PhD and one ophthalmologist from University of Coimbra	Coimbra (PT)
	A.34	Critical Health	2008	Researchers from IBILI/University of Coimbra (spin-off from Critical Software)	Coimbra (PT)

Technology-based products or services	Links: R&D center/univ.
VS2 - Virtual Structural Simulation System – intelligent system for evaluation of the structural integrity of critical components in the aeronautics industry	PIEP / University of Minho
Services on: Digital Libraries / eBookplus (Digital Book)	INESC Porto / FEUP / University of Porto
HVR – High-video recorder systems allow the connection of analog and ip video camera, in the same equipment	Avepark / University of Minho
FSM-I, FSM-A, SURFACE.T	FEUP / University of Porto
Digital preservation and advanced solutions for digital archives and libraries	University of Minho
Applications for digital books, e-book platforms, digital libraries, digital archives, digital museums	University of Aveiro
Kelius Multiservice Platform: application on buildings, cruises, business parks; network management	IST / Inesc ID / Technical University of Lisbon
Civil engineering software	FEUP / University of Porto
Pervasive Technologies: Next generation in visual pattern recognition technology, delivering accurate traffic and usage data to users in a variety of fields (e.g. retailers, and municipalities)	University of Minho
Human Body 3D - 3D models with high realistic textures from human anatomy to physiology	IPN Incubator / University of Coimbra
SituAction - Web-based digital signage software platform, supporting collective wireless interaction	University of Minho
Digital gaming applications / 3D	ICAT/University of Lisboa
Mobile software for finding friends and the time to get to them	Instituto Superior Técnico (IST)
Intelligent Digital Signage Networks - artificial intelligence-based technology matching content to audience, time, and location	In-Porto / FEUP / University of Porto
iTRreport, CAPView, BioDreams, VitalJacket	University of Aveiro
OphthalSuite (Acquisition & imageCORE), EyeDropper: compliance validation system; medical expert diagnosis	University of Coimbra; Centro Cirúrgico de Coimbra; NEUROEYE - Electromedicina e Psicofisiologia da Visão, Lda; SA - Intelligent Sensing Anywhere, S.A
Retmaker – automatic detection of lesions in the retina of diabetic patients suffering from diabetic retinopathy	IBILI / University of Coimbra

Table 5.A. (continued) Early-stage start-up technology companies

Examples of early-stage Portuguese technology-based start-ups with relevant university/research linkages

Sector	Ref #	Company	Est.	Spin-out source	Location
Medical Devices/Diagnostics (cont'd)	A.35	GenoMed	2004	Spin-off from IMIM, with senior researchers	Lisboa (PT)
	A.36	iSurgical 3D	2009	Researchers from University of Minho	Guimarães (PT)
	A.37	PETsys	2008	Consortium of senior researchers	Lisboa (PT)
	A.38	Plux	2007	Doctorates from IST	Covilhã / Lisboa (PT)
Microelectronics/Materials/Equipment/Robotics	A.39	CustomLenda Solutions, S.A. (Super Ego)			Lisboa (PT)
	A.40	Fluidinova	2005	Faculty from FEUP and PhD students	Porto (PT)
	A.41	idea.M, Lda	2008	Two mechanical engineers from FEUP	Porto (PT)
	A.42	OCEANSCAN-Marine Systems & Technology, Lda	2008	Faculty from University of Porto	Porto (PT)
	A.43	Ownersmark S.A.	2008		Porto (PT)
	A.44	Ply Engenharia	2006	Two MSC in mechanical engineering from IST	Oeiras (PT)
	A.45	SelfTech	2008	Three engineers and an economist	Lisboa (PT)
	A.46	Techsuber Lda	2008	Post-doc and PhD researchers: technology of forest products	Lisboa (PT)
	A.47	Tomorrow Options	2007	PhD researchers from INESC Porto	Porto (PT)
	A.48	UAVision	2005	Ex-students from IST (aeronautical, electronic and Informatics engineers)	Lisboa (PT)
	A.49	We Adapt	2008	Consortium of senior researchers from University of Minho	Braga (PT)

Technology-based products or services	Links: R&D center/univ.
HCV genotype (amplifies viral nucleic acids extracted from patient's plasma samples to determine the genotype); detection of Hepatitis B virus genetic diversity (allows investigating the genetic diversity of HBV in infected patients)	IMM / University of Lisboa
3DPectus System - system for automatic and personalized modelling/bending of surgical prosthesis for correction of pectus excavatum based on pre-surgical radiology information (CT Scan). This technology allows a more accurate surgical intervention	University of Minho
PET - positron emission tomography used as a new medical imaging system for the diagnosis of breast cancer	LIP / Instituto Superior Técnico (IST)
bioPlux - wireless and miniaturized signal acquisition system (applicability in the healthcare arena, particularly in physical therapy); powerPlux - package composed of signal acquisition hardware and automated signal processing software to allow sports technicians to rapidly evaluate and diagnose the physical conditions of their athletes; bioPlux motion - autonomous device with an integrated xyzPlux triaxial accelerometer	UBI / IST-UTL
Healthy/ergonomic footwear	IST / Technical University of Lisbon
RORpaint, NETmix, RIMcop, nanoXIM, CFDapi	FEUP / University of Porto
Composite materials used in musical instruments	UPTec - FEUP / University of Porto
Light Autonomous Underwater Vehicle System (LAUV)	University of Porto
Structural composite poles in thermoplastic matrix	Universities on Minho and Porto
Opencell technology & multimaterial truck cargo bodies	IST/ Technical University of Lisbon; FEUP / University of Porto; University of Coimbra; University of Aveiro
Robotic solutions, autonomous intelligent systems as well as hardware and software for embedded systems	IST / Technical University of Lisbon
Multiple-layered assemblage of wood and other natural based materials	Institute of Agronomy (ISA), Technical University of Lisbon
WalkinSense and ChangeYourPosition are electronic, portable and wireless medical; the former to monitor and assess lower limbs condition and the latter to avoid bedsores or decubitus ulcers	INESC Porto / FEUP/ University of Porto
Aeronautics, mechatronics, remote sensing: low-cost autonomous aerial platform for agriculture, forest and surveillance applications	ISA / IST / Technical University of Lisbon
FashionMe – “Haute Couture” and casual wear for disabled people with their own brand; BodyMe – devices for physical reconstitution	University of Minho

Early-stage start-up company

A.5. Bioalvo S.A.

Characterization

BIOALVO S.A. is a drug development company focusing on central nervous system disorders. The firm designs and develops innovative drug screening platforms that generate more potent and efficient drugs aimed at building successful therapies.

BIOALVO S.A. is based in Lisbon, Portugal and started as a project entering, and winning, a competition promoted by ICEP and APBIO – Iberian Bioentrepreneur – in late 2002. Imperial College Entrepreneurs Challenge 2003, ISCTE Innovation 2003, IAPMEI Technological Innovative Enterprise 2003 and National Entrepreneurship Competition 2005 were also prizes won by the BIOALVO project. Following these prizes, in 2005 funding from a VC company allowed the establishment of laboratories at the University of Lisbon incubator – ICAT. The formal activities started in January 2006 and in less than one year the first patent was submitted.

S&T base

The company operates an alliance-based R&D business model and relies on partnerships to fill its pipeline and bring its products to the market, like new drugs for treating human diseases as amyloidosis, Huntington's, Alzheimer's or Parkinson's.

Some of the current collaborations include Science Faculty of University of Lisbon (FCUL) in Lisbon, Technology and Applied Science Institute (ICAT) in Lisbon, Gulbenkian Science Institute (ICG) in Oeiras, Oceanography Institute in Lisbon, BIOCANT PARK in Cantanhede, and Imperial College of London.

Human resources strategy

No. employees: 2008: 10; 2007: 10; 2006: 7

Education levels of employees: 2008: 5 PhD; 5 graduates; 2007: 4 PhD; 6 graduates; 2006: 3 PhD; 4 graduates

Markets

Internationalization: 30 countries in Europe and North America

Early-stage start-up company

A.9 Advanced Cyclone Systems, S.A.

Characterization

Advanced Cyclone Systems develops numerically optimized cyclones with mechanical or electrostatic recirculation for particulate matter emission control. ACS incorporates three independent patented innovations: a unique, numerically optimized, cyclone geometry – “Hurricane”; an innovative (mechanical) recirculation system; the application of very reduced electrostatic charge within the recirculation process.

S&T base

Advanced Cyclone Systems, S.A. was founded in May, 2008 by Romualdo Salcedo (CTO), Portuguese, Aggregate Professor in the Engineering Faculty of Porto and Pedro Ribas Araujo (CEO), Portuguese, Engineer and MBA from Nova University of Lisbon.

Markets

First two years, mainly Europe, afterwards USA, Japan, South Korea and India.

Initial capital (in K€): 50 (to be raised to 1,550 in 2009, by a Portuguese venture capital company)

Revenue (in K€): 2009 (expected): 250; 2008: 40

Exports (in % sales): 2009 (expected): 50%

R&D expenditure (in % sales): 2009 (expected): 80%; 2008: 50%

Early-stage start-up company

A.10 Albatroz Engineering

Characterization

Albatroz Engineering is based in Lisbon, Portugal and started its activities in March 2006. The firm was formed around the robotics competencies of its founders. One holds an MSc and the other holds a PhD degree in robotics, with specialization in signal processing and mobile robots.

S&T base

Through R&D activities, Albatroz Engineering aims at finding technical solutions for its clients in the fields of robotics, aeronautics, software, and mechanical and electrical engineering. The two innovative solutions for over-head power line inspections provide inspection teams with integrated, interactive, real-time tools to improve quality of service are good examples of the competencies developed by the firm.

The multidisciplinary nature of Albatroz Engineering and the innovative nature of the products developed by the firm are based on an internationalization strategy and on the creation of cooperation agreements with other firms and universities.

Human resources strategy

No. employees: 2008: 4; 2007: 6

Education levels of employees: 2008: 0 PhD; 4 graduates; 2007: 2 PhD; 4 graduates

Markets

Internationalization: Spain; Brazil

Initial Capital (in K€): 80

Revenue (in K€): 2009: (expected): 435.0; 2008: 145; 2007: 244.3; 2005: 46.2

Exports: 2009: 95%; 2008: 41%

R&D expenditure (in % sales): 2009: (expected growth rate): 50%; 2008: 44.000; 2007: 75.000

A.12 WS-Energia

Characterization

WS- Energia was founded in 2006 to explore the commercialization of the patent of its system Double Sun. In August 2007, it had their first installation in Italy.

In February 2008 the new national rules for micro-generation support the installation of renewable energy systems, which led to a significant increase of contracts for WS-Energia.

In September 2008, WS-Energia and Solar Monkey created two joint ventures registered in Nevada. The first one, Solar Monkey Europa has the goal of creating 10 MW of photovoltaic centrals in 2009, 20 MW in 2010 and 30 MW in 2011. In this joint venture, WS-Energia supplies technical know-how and Solar Monkey the financial backup. The second joint venture, Sunny Tracking Inc., intends to produce solar followers in the USA. WS-Energia supplies technical know-how and industrial property and Solar Monkey the financial support and its own park where 2MW are predicted in 2009.

In December 2008, WS-Energia reached a turnover of 1.3 M€ and 500,000 worth of ongoing contracts.

S&T base

WS-Energia has established partnerships with several universities, with which they develop research projects in the fields associated with solar energy, namely with Instituto Superior Técnico, Faculdade de Ciências da Universidade de Lisboa and Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa.

Human resources strategy

No. employees: 2008: 14; 2007: 9

Education levels of employees: 2008: 0 PhD; 4 graduates; 2007: 2 PhD; 4 graduates

WS-Energia was founded by one Portuguese Msc and an Italian Phd in Physics. WS-Energia had 9 employees in 2007, of which two were PhD's and seven had a graduate level of education. In 2008, WS-Energia had 18 employees, which included four PhD's and 14 were university graduates.

Markets

WS-Energia has established relationships with foreign partners in order to enter other markets. In February 2008, a masters thesis was developed in Poitiers University in France to study the entry of WS-Energia in the French market. WS-Energia is now present in Portugal, Italy, Spain and Greece. Entrance into the American market is expected to be in 2009, through the joint ventures that have been established.

Revenue (in K€): 2008: 1,300; 2007: 50

Early-stage start-up company

A.17 Critical Links

Characterization

Critical Links was spun-off in 2006 from Critical Software. Backed by venture funds, Critical Links is headquartered in Fairfield, New Jersey, and with offices in Portugal, United Kingdom, and India. The edgeBOX, its main product, is commercialized worldwide through a network of channel partners including resellers and service providers.

S&T base

Critical Links develops and markets edgeBOX, the first unified communications appliance or "Office-in-a-Box" that provides all the vital voice and data communication services required by SMBs or branch offices, out of a single remotely managed device, and at a SMB price point.

The edgeBOX aims to capture the massive SMB market opportunity created by low cost broadband internet access and migration to VoIP that generates demand for sophisticated, reliable, integrated, low-cost, and easy-to use communication services.

Critical Links has established partnerships with key industry players that enhance the product value proposition and add value to the end users, including Intel (platforms), Polycom (phones) and Digium/Asterisk (TDM cards).

Human resources strategy

No. employees: 2008: 47; 2007: 32

Education levels of employees: 2008: 1 PhD; 11 graduates; 2007: 1 PhD; 11 graduates

Markets

Internationalization is the base of Critical Links activity. Their main product, edgeBOX, is sold around the world.

Initial Capital: Venture fund-backed company - Spin-out from Critical Software

Revenue (in K€): 2008: 1,284.1; 2007: 248.0

Exports: Critical Links exports to the five continents. The main markets are USA, Portugal, Italy, Canada, and Brazil

R&D expenditure (in % sales): 2008: 60%

Early-stage start-up company

A.23 Metatheke Software

Characterization

Metatheke was founded in 2007 by four Portuguese people, three of which have a PhD in electronic and telecommunications engineering, and one a Master's degree in electronic and telecommunications engineering.

R&D

Spin-off from Aveiro University

Human resources strategy

2008: 5; 2007: 2; all with a university education

Markets

Portugal, Angola, Cape Verde

Initial capital (in K€): 10

Revenue (in K€): 2009: 200.0; 2008: 100.0; 2007: 16.0

Exports (in % sales): 2009 (expected): 8%; 2008: 7%

R&D expenditure (in % sales): 2009 (expected): 20%; 2008: 5%

A.27 Take the Wind, Lda.

Characterization

TAKE THE WIND, Lda. was established in 2008 by two founders, one with a degree in economics and other with a master's degree in psychology and initial capital of 10,000 EU.

TAKE THE WIND (TTW) is a startup based in Coimbra, located on Incubadora Pedro Nunes. The aim of this firm is "connecting science to people" and its customers are mainly pharmaceutical labs and university research centers.

S&T base

TTW is constituted by a multidisciplinary team with knowledge in life sciences, design, computing and communication. This expertise allows the firm to produce 2D/3D animation or real footage mixed with 3D, to communicate with scientists, healthcare professionals, patients, and students.

Human resources strategy

In the end of their first year, TAKE THE WIND had 8 individuals on staff – one with PhD degree and seven graduates with masters' and college degrees.

Markets

At the moment, the main markets of TAKE THE WIND are Portugal, Spain, and Brazil.

Initial Capital (in K€): 10

Revenue (in K€): 2009 (expected): 462.8; 2008: 356.0

Exports (in % sales): 2009 (expected): 13%; 2008: 3%

R&D expenditure (in % sales): 2009 (expected): 54%; 2008: 51%

Early-stage start-up company

A.31 Xarevision

Characterization

Xarevision is a company in the seed state, currently gathering risk capital to pursue its activities. Founded in December 2006, its core business is digital publicity based on the know-how of the founders in terms of video/multimedia and artificial intelligence.

S&T base

Xarevision is a spin-off of INESC-Porto, where its offices are currently located. It was financed with seed capital in June 2007 by Ciencinvest.

Human resources strategy

The founding team includes three Portuguese PhD students. The team includes in addition, two managing partners, and four employees, of which one is working part time.

Markets

Currently the company has a pilot project with Sonae distribution, to be test-marketed in 12 stores by June 2009. This pilot developed in one store allowed it to develop technologies that explore new ways of interaction with the client through sales displays. After establishing itself in this chain, it wishes to spread to other countries in order to achieve large audiences and allow for the company's sustainability. Its goal is to be established in the Portuguese market by 2009/2010.

Its internationalization strategy aims at reaching Spain in 2010/2011 and entering the American market in 2011.

Initial Capital (in K€): 9

Revenue (in K€): 2009: (expected): 225; 2008: 143; 2007: 50; 2006: 3

R&D expenditure (in % sales): 2009: (expected) 22%

Early-stage start-up company

A.33 Blueworks – Medical Expert Diagnosis Lda.

Characterization

BlueWorks - Medical Expert Diagnosis is a technological company developing innovative diagnosis support systems, with a particular emphasis in the ophthalmology field.

The company aims at innovating in the achievement of therapeutic strategies for ophthalmological disease treatment; allying human knowledge and computing power; using artificial intelligence's learning capabilities; achieving accurate computer assisted diagnosis; accurately monitoring and predicting condition evolution and searching for patterns in chosen therapeutic strategies.

S&T base

Founded in April 2007, BlueWorks was the first spin-off of the University of Coimbra's Biomedical Engineering Course. The company was founded by three biomedical engineers. The start-up was cosponsored by a number of physicians, by University of Coimbra professors, and by ISA, NeuroEye, and Coimbra's Surgical Center.

Human resources strategy

Blueworks operates in a Private Healthcare Unit – Coimbra's Surgical Center (Centro Cirurgico Coimbra) and besides the three Biomedical Engineers that founded the business, the company has now one engineering SME (ISA); one psychophysiology start-up SME (NeuroEye); one ophthalmologist MD; two physics PhDs. Blueworks still is at a research and development stage but there are plans to expand the workforce in the field of software programming.

Markets

Blueworks technology is under development. The company has made preliminary contacts with multinationals in Europe and is considering the US market as a potential main target.

Initial capital (in K€): 5

R&D expenditure (in K€): 2009 (expected): 110; 2008: 80; 2007: 15

Early-stage start-up company

A.35 GENOMED: Diagnósticos De Medicina Molecular, S. A.

Characterization

Genomed is a spin-off of the Medicine Faculty of University of Lisbon, more specifically of the IMM – Instituto de Medicina Molecular. It originated from research developed in IMM in the three main areas of oncology, infectious diseases, and genetic diseases/pharmacokinetics. GenoMed performs tests of genetics, cytogenetic, pharmagenetics and molecular biology, and also GenoMed participates in clinical research projects and executes paternity and ancestry tests.

S&T base

GenoMed was founded in 2004 to promote and transfer scientific knowledge in the biology and molecular genetics field to the clinical practice, through medical applications of diagnosis and prognosis of diseases, as well as monitor to the treatment's response. Its foundation derives from public-private partnership; GenoMed consists of six public companies and one private company (e.g. Espírito Santo Saúde and Farminvest).

This firm is located inside the Medicine School of University of Lisbon. Since the beginning, in addition to the company's marketed area of services, a second stream of research has been devoted to virology, which is entering commercialization this year.

Human resources strategy

GenoMed had 8 employees in 2005, including three were PhDs and 5 college graduates. In 2007, GenoMed had 14 employees including 4 PhD's and 9 college graduates. At the end of 2008, it had a staff of 17 employees including 5 PhD's and 11 college graduates.

Markets

In 2009, GenoMed aims to internationalize some of its core services, in particular, to the US.

Initial Capital (in K€): 1,000

Revenue (in K€): 2009: (expected) 991.3 increase; 2008: 793; 2007: 901; 2005: 647

Exports (in % sales): 2009: (expected) 1%

R&D expenditure (in K€): 2009: (expected) 10% growth rate 2008: 324; 2007: 1,178

Early-stage start-up company

A.36 iSurgical3D & Automation

Characterization

iSurgical3D & Automation started its activities during 2009 and is located in Avepark, a Science and Technology Park associated with the University of Minho. The firm formed around the technology 3DPectus System that was developed by one of its founders as he earned his PhD. Mechatronics services are also provided to customers.

S&T base

The science-based nature and the growth potential of iSurgical3D & Automation was rewarded by several entrepreneurship prizes and funding institutions like the BES Inovação, Start Award and Inov Capital. The multi-disciplinarity of firm activity is reflected in the scope of the PhDs of the founders: electronics and computers, mechanics, and medicine.

Human resources strategy

No. employees: 2009: 4

Education levels of employees: 2009: the four founders have PhD

Markets

USA has been selected as the first step in internationalization; but hospitals worldwide provide a large potential market when the technology is established. Portugal's market does not have a sufficient customer base to provide for the growth of the firm.

Initial capital (in K€): 5

Revenue (in K€): (expected growth): the company was formed in 2009

Exports (in % sales): 2009: Internationalization is crucial for iSurgical3D & Automation

R&D expenditure (in % sales): 2009 (expected growth rate): all iSurgical3D & Automation activity is based on R&D

Early-stage start-up company

A.37 PETsys, Medical PET Imaging Systems, S.A.

Characterization

PETsys is a Portuguese consortium in collaboration with CERN and laboratories participating in the Crystal Clear project. PETsys was founded in 26th February, 2008 by five institutions of R&D and 15 prospect collaborators.

S&T base

The core of this consortium is an application of one technology, developed by João Varela and other researchers in CERN since 2003 – PET-Mammography. This groundbreaking new positron emission tomography device has just been commissioned for the first time in Europe. If trials are successful, it promises to be an important step forward in the diagnosis of breast cancer. In February, the PET-Mammography consortium of five Portuguese institutes, including the national particle physics laboratory LIP, Lisbon's Garcia de Orta Hospital and the Porto Institute of Oncology, commissioned a prototype PET device dedicated to breast imaging, ahead of clinical trials.

The prototype is now being used to perform 100-200 clinical trials at the Porto Institute of Oncology. Depending on the results obtained, the medical community may decide to put such a device into full service. In the meantime, other project is being set up in Marseilles. This process consists on building a PET device coupled to an ultra-sound system - ClearPEM sonic. This is device will be installed in Marseille's La Timone Hospital by the end of 2009. The marriage of PET and ultra-sound technologies promises another leap forward in breast imaging.

Human resources strategy

PETsys' personnel are composed by three people: one executive and two non-executive members (two doctorates and one college degree).

Initial capital (in K€): 250

A.38 PLUX - Biosignal Engineering

Characterization

PLUX – Biosignal Engineering is a startup based in Covilhã and Lisbon that was founded in 2007 by three technology experts and one business management professional: one PhD in behavioral biometrics (IST), two Masters in electrical and computer engineering at IST, and a professional manager from IT companies with more than ten years of experience.

Though PLUX is centered on biosignals engineering, the kind of products developed have a wide range of applications (e.g., healthcare, biomechanics). Currently, PLUX products are used in rehabilitation medicine centers for diagnosis, recovery, and follow-up care, and also at research centers in the areas of physical therapy, sports, kinematics, and ergonomics.

S&T base

In 2005, a doctoral student from electrical and computer engineering studied how to integrate biosignals processing in miniaturized wireless sensor devices. In 2006, the first applications were developed for physiotherapy, accessibility, and ergonomics. PLUX benefits from scientific knowledge in biosignals processing applied in three major application areas: research, health, and sports. Nowadays, the aim is to protect the intellectual property obtained to innovative activities developed, especially since 2008.

Human resources strategy

PLUX had five employees in 2007 (all graduates), at the end of 2008, it had ten employees, of which two were PhD's and seven had a university degree.

Markets

At the moment, the main markets for PLUX are Portugal, Spain, Greece, England, and Sweden.

Initial capital (in K€): 5

Revenue (in K€): 2009 (expected): 400.0; 2008: 104.1; 2007: 33.6

Exports (in % sales): 2009 (expected): 43%; 2008: 43%; 2007: 22%

R&D expenditure (in % sales): 2009 (expected): 50%; 2008: 176%; 2007: 150%

A.40 Fluidinova

Characterization

Fluidinova was founded at the end of 2005, motivated by patent applications resulting from research. The contact with a business angel in 2004 gave the team incentive to pursue company formation. Currently it has 13 promoters and 22 people on the team. It has four patents and four registered trademarks. It has two capital risk companies and FEUP as shareholders.

Its office has been located in Tecmaia from the beginning, where it has recently made a large investment to install its production unit in a clean room environment.

S&T base

Fluidinova is a spin-off of FEUP, more specifically of the laboratory LSRE. It originated from research developed in LSRE and specific projects in fluid mechanics. José Carlos Lopes recognized the commercialization potential of the research. When the company was founded, four lines of business were established:

1. CFD- Computation in fluid dynamics: a service that allows the simulation of fluid circulation in any kind of structure
2. Energy simulation in buildings- a line of services where it can study the energy behavior of the buildings
3. Reaction engineering
4. Materials and chemistry

The technologies it has developed are disruptive technologies that can become revolutionary in terms of chemical reaction.

Human resources strategy

Fluidinova had 9 employees in 2007, of which 4 were PhD's and 5 were college graduates. In the end of 2008, it had 12 employees, of which 2 were PhD's and 10 held a university degree.

Markets

Fluidinova has already established clients in other countries, having reached 4% of exports. It is now present in 11 different countries

Initial Capital (in K€): 85

Revenue (in K€): 2009: 95% growth rate; 2008: 303; 2007: 255; 2005: 1

Exports: 2009: 20%; 2008: 4%

R&D expenditure (in K€): 2009: 10% growth rate 2008: 324; 2007: 1,178

A.44 PLY Engenharia Lda.

Characterization

Ply is a design and prototyping company focusing on the mechanical manufacturing industry. The company has been developing several lightweight and cost efficient solutions, with particular emphasis on advanced manufacturing and joining techniques and materials such as ultra-high-strength steel, aluminum, composites, and fiber metal laminates.

The company's core project is currently "Opencell." Opencell technology is a breakthrough in sandwich panels construction/design that is lighter than original sheet material faces.

S&T base

Founded in June 2006, the company's scientific and technological basis draws mainly on the technical skills and experience of the inventor and founder António Valente. Ply benefits from Antonio's previous research in diverse fields like structural analysis and carbon fiber/honeycomb design at CERN's Tracker Project (prize awarded by CERN for "Excellent Performance"); development of ultra high strength steel cargo floors for light trucks (prize awarded by Swedish Steel AB for the innovative use of UHSS); improvement of the body's torsional stiffness in Volkswagen Group's cars through the use of weldbonding technology; and various projects in Berkeley University, Lawrence Berkeley National Laboratory, Oxford Brookes University, MERO Raumstruktur, UNISYS, Ford, Volkswagen, and Jaguar. Ply is currently working on a Tekes-funded R&D project.

Human resources strategy

From 2006-2007 Ply had two employees – the founders – and in 2008 a third employee with 3D graphic modeling skills joined the team. Ply is at an early stage of its life cycle and, at a medium term, envisions the recruitment of several specialists both from management and mechanical engineering fields.

Markets

Presently Ply's technology is being developed for (or in collaboration with) several companies and organizations in diverse countries such as Finland, US, Spain, France and Brazil.

Initial capital (in K€): 5

Revenue (in K€): 2008: 109; 2007: 22; 2006: 10

Exports (in % sales): 2009 (expected): 60%; 2008: 60%

R&D expenditure (in % sales): 2009 (expected): 40%; 2008: 60%; 2007: 80%; 2006: 3%



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5.2 Mature technology companies

Table 5.B. Mature technology companies

Examples of mature Portuguese technology-based companies with relevant university/research linkages

Sector	Ref	Company	Est.	Spin-out source	Location
Agri/ Food	B.1	Agri-Ciência, Consultores de Engenharia, Lda.	2000	Professors and PhD students from the agronomy department	Lisboa (PT)
	B.2	Castro, Pinto & Costa, Lda.	2000		Maia (PT)
Bio/ Pharma	B.3	Alfama	2002		Boston (US)/ Lisboa (PT)
	B.4	Bioskin Molecular and Cell Therapies	2002	Faculty from University of Porto	Maia (PT)
	B.5	Bioteca	n/d	Capital owned by a large company (Grupo Lena) and InovCapital VC	Lisboa (PT)
	B.6	Biotecnol	1997	PhD students from King's College	Oeiras (PT)/ Durham (US)
	B.7	Biotrend	2000	Graduate students and faculty of IST	Lisboa (PT)
	B.8	Crioestaminal	2003		Cantanhede (PT)/ SP/ IT
Energy/ Environment/ Sustainability	B.9	SRE	2003		Torres Vedras (PT)
ICT/ Software/ Digital Media	B.10	Critical Software	1998	PhD students from University of Coimbra	Coimbra (PT)/ San Jose (US)/ Southampton (UK)/ Bucharest (RO)
	B.11	Link Consulting	1999		Lisboa (PT)
	B.12	Maeil Consultores	1999	Former students from IST	Lisboa (PT)
	B.13	MOG Solutions	2002	Researchers from INESC Porto	Maia (PT)
	B.14	WIT Software	1999	Faculty from University of Coimbra	Coimbra (PT)
	B.15	YDreams	2000	Faculty from FCT-UNL	Almada (PT)/ Austin (US)/ Xhangai(CN)/ Barcelona(SP) /Rio de Janeiro (BR)
Medical/ Devices/ Diagnostics	B.16	CGC - Centro de Genetica Clinica	1992	Faculty from FEUP	Porto (PT)
	B.17	Medmat Innovation, Lda.		Faculty from FEUP	Maia (PT)
Micro-electronics/ Materials/ Equipment/ Robotics	B.18	Fibersensing, Sistemas Avançados de Monitorização, S.A.	2004	Four researchers (3 PhD) from INESC Porto	Maia (PT)
	B.19	IdMind	2000		Lisboa (PT)
	B.20	ISA	1990	PhDs from University of Coimbra	Coimbra (PT)
	B.21	Multiwave	2003	Faculty from FEUP	Maia (PT)

Technology-based products or services	Links to R&D center/ Univ.
Decision support systems for knowledge and information management (Web-based business intelligence solutions)	Instituto Superior de Agronomia / Universidade de Évora / Centro Operativo e de Tecnologia de Regadio
OleoTest - reliable, fast and inexpensive method to control food oils quality	
Carbon monoxide-releasing molecules (CORMs)	IMM/ University of Lisboa / ITQB / New University of Lisboa
Biomaterials and stem cell therapies	FEUP / University of Porto
Stem cell cryopreservation	IST / Technical University of Lisboa
Anti-HER2, Anti-Hsp90, Cardiotrophin I, anti-PTHrP	
In-house projects aiming at the production of high value biomolecules	IST / Technical University of Lisboa
Stem cells cryopreservation	IMM/IPO/IST/Biocant
SRE stacks – development of portable fuel cells	IST / Technical University of Lisboa
ISVV – Independent Software Verification & Validation Premfire, WMPI, WOW, Xception	University of Coimbra
eBanka, e-doclink, Balcão Único, e-Urban	Inesc / Instituto Superior Técnico (IST)
Maeil Transporter – Shipping management tool for liner agencies and freight forwarders MdM - Maeil doc Manager, MdM e2	Taguspark / IST / Technical University of Lisboa
mxfSPEEDRAIL, TOBOGGAN, MXF DEV. TOOLS	INESC Porto / FEUP / University of Porto
WIT PC/Toolbar/Web communicator	University of Coimbra
Vodafone Cube, Adidas Eye Ball, Interactive MUPI Nokia N90, Virtual Sightseeing	FCT / New University of Lisboa
Medical genetics testing	
Medical devices, biomaterials, Bonelike®, 3D Biomodelling	University of Porto
Developer and manufacturer of optical fiber Bragg grating (FBG) based sensor systems for advanced monitoring applications	Inesc Porto / FEUP / University of Porto
Robotic kits, based on microcontrollers, used in a variety of innovative projects, up to complex robots developed for varied ends, such as: search and rescue, robotic soccer, art, and publicity.	IST / Technical University of Lisbon
iLogger – multi-purpose autonomous (GSM/GPRS based, battery powered) re-mote management system providing data logging, automatic reading and alarms	ISEC / FCTUC / LEI (UC) / University of Coimbra
Pulsed fiber lasers; optical sources	INESC Porto /University of Porto

Mature technology company

B.2 Castro, Pinto & Costa, Lda.

Characterization

Castro, Pinto & Costa, Lda. (CPC) is based in Maia, Portugal and started its activities in 2000. CPC was one of the first spin-offs from the University of Minho. The company has five strategic business areas: consulting/auditing; training; research and development; laboratory of foodstuffs and water analysis, and product selling and trading.

S&T base

Making use of R&D activities, CPC bases its strategy on planning and adjusting the services provided to the specific needs of the clients. The continuous acquisition/updating of competencies in new technologies and/or product development is possible due to the permanent liaison with universities and R&D institutes.

Human resources strategy

No. employees: 2008: 12; 2007: 10; 2005: 6;

Education levels of employees: 2008: 1 PhD; 9 graduates; 2007: 1 PhD; 8 graduates; 2005: 0 PhD; 6 graduates

Markets

Internationalization: Spain, Greece, UK, and France

Initial capital (in K€): 25

Revenue (in K€): 2009 (expected): 745.5; 2008: 710.0; 2007: 510.0; 2005: 300.0

Exports (in % sales): 2009: 5%; 2008: 3%; 2007: 1%; 2005: 0%

R&D expenditure (in % sales): 2009 (expected): 22%; 2008: 16%; 2007: 31%; 2005: 17%

Mature technology company

B.10 Critical Software

Characterization

Critical Software started its activities in 1998 in Coimbra. Now it has offices in Coimbra, Lisbon and Oporto (Portugal), San Jose, California (USA), Southampton (UK) and Bucharest (Romania). The firm was formed around the research activities that the founders developed during their PhD programs at the University of Coimbra. NASA was its first customer and since then Critical Software provides solutions, services and technologies for mission- and business-critical information systems across several markets.

S&T base

Critical Software provides information systems to customers in specific niche markets where critical systems are identified.

Critical Software bases its software development on a high degree of interaction with clients. Each customer demands specific solutions; providing these individual solutions places R&D activities as the base of Critical Software's activity. It is the policy of the company to retain the intellectual property of all the knowledge created in client-oriented projects. This allows the development of new business strategies that can result in the creation of successful spin-offs, such as Critical Manufacturing.

Critical Software complies with stringent privacy and data security requirements, such as NATO and EU secret level requirements, and EU and international standards of software quality.

Human resources strategy

No. employees: 2008: 374; 2007: 274; 2006: 186

Education levels of employees:

The founders have PhDs and the majority of employees have at least a college degree in computer science or software development

Markets

Internationalization: USA; Europe; Brazil; Angola; Mozambique

Initial capital (in K€): 1,000

Revenue (in K€): 2008: 19,000.0; 2007: 14,500.0; 2006: 8,600.0

Exports (in % sales): 2008: 62%; 2007: 72%; 2006: 59%

R&D expenditure (in % sales): 2009 (expected): 10%; 2008: 10%; 2007: 10%; 2006: 12%

B.12 Mael Consultores, TIE, Lda.

Characterization

Mael Consultores, TIE, Lda. is a firm devoted to the development of information engineering systems and dedicated to the integration of technologies in businesses. This Portuguese firm is exclusively dedicated to the development of information management technology for the shipping sector.

S&T base

Mael was founded in 1999 with around 25,000 EUR as initial capital by two Portuguese engineers from information systems (IST). The goal of this firm, located at the Taguspark, is the creation of a technological infrastructure aiming at the development of information system solutions. Moreover, Mael relies on consultants acting in the market and specialized in consulting, implementation, training and development of standard software and support service to small- and medium-sized businesses.

Human resources strategy

Mael had 4 employees in 2005 (all graduates), at the end of 2008, it had 12 employees, of which 11 had a university degree.

Markets

Mael Transporter is the most recent product of Mael Consultores for the Portuguese and international market. The program start-up took place in September 2001, in Rotterdam, in the Dutch company Docra Agencies, followed by its implementation in Lisbon and Porto in Ibero Linhas Transportes, Lda. Recently, Mael Transporter was installed in Angola in several agencies communicating through web services with a server based in Portugal.

Initial capital (in K€): 25

Revenue (in K€): 1,000.0; 2008: 950.0; 2007: 700.0; 2005: 550.0

Exports (in % sales): 35%; 2008: 32%; 2007: 36%; 2005: 40%

B.13 Mog Solutions

Characterization

Mog Solutions is a spin-off of INESC-Porto, created at the end of 2002, by five promoters (of which three remain), that were engaged in projects to establish standards for formats in image digitalization. Once this standard was established the team realized it had the know-how to meet a market need. Mog solution develops technology that allows the transformation of digital image files. Its main clients are equipment manufacturers such as Sony Adobe; Apple; Autodesk; AVid; Microsoft; Toshiba; NBC Olympics. Close contact with its clients allows it to determine the requested format for each manufacturer. Mog Solutuions has begun to diversify its technology offer and has opened two new companies. It has also begun a project that applies its technologies in the military sector, a new potential market that the company would like to expand to in the near future.

R&D

It participates in two European projects in R&D – World Screen and EDED.cine – that focus on content distributions to movie theaters, in which it has invested almost 400 K€. It maintains a partnership with INESC-Porto, participating in several projects.

Human resources strategy

It had 10 employees in 2007 and 14 in 2008, of which all are university graduates. It supplies training for undergraduates from FEUP, and many of the students become employees at Mog solutions.

Markets

Given that the customers are equipment producers, 100% of Mog Solutions' technologies are sold abroad, namely in the USA, Japan, Germany, Belgium, and Switzerland.

Initial capital (in K€): 50

Revenue (in K€): 2008: 918.0; 2007: 801.3; 2006: 630.0

Exports (in % sales): 2008: 100%

R&D expenditure (in % sales): 2008: 42%

B.14 Wit Software

Characterization

Wit software was founded in 2001 by Luís Silva, a faculty member at University of Coimbra with a PhD in computer engineering, who began developing software for telecommunication in 1997. His team accumulated considerable know-how as they developed several projects for Telecel (later Vodafone), a mobile provider in Portugal. Due to the increase in projects with this partner, Telecel suggested the creation of a company to develop software for mobile communication. While the company had a steady client at its creation, one of the conditions in its partnership with Vodafone was that Wit Software could not supply Vodafone's national competitors; this favored the company's internationalization from an early stage.

Market Strategy

According to Luís Silva, it is very difficult to sell software services on demand, which led to the creation of a product. Therefore, Wit software has adapted a hybrid model, which includes products and services. The company had a department of project on demand, and the R&D development (50%) to develop projects that can incorporate the services offered. This change of strategy allowed for a significant growth of the company. In 2007, a commercial department was created to incorporate business development. This growth created the need for new offices. Wit Software opened an office in Lisbon for the business development unit. New offices in Leiria and Oporto were also created to absorb local qualified human resources. Thus, decentralizing the productive sector.

Human resources strategy

In 2005, the company had 15 employees of which 13 were university graduates; in 2007 there were 42 employees and 54 in 2008. Of these, 37 and 43 respectively, were university graduates in informatics engineering.

Internationalization

Wit Software first internationalization strategy was to enter countries with a language connection to Portugal, such as Brazil, Angola and Mozambique. However, this strategy was not very successful, and Wit Software decided to enter other countries through their partner Vodafone. This successful experience gave them entrance to unknown markets. It is now present in several countries such as Portugal, Germany, Spain, South Africa, USA, Italy, Czech Republic, Turkey, United Kingdom, Austria, France, Chile, Canada, and Luxembourg.

Initial capital (in K€): 5

Revenue (in K€): 4,000.0; 2008: 3,000.0; 2007: 1,800.0; 2005: 770.0

Exports (in % sales): 50 %; 2008: 35%; 2007: 47%; 2005: 8%

Mature technology company

B.15 YDreams

Characterization

You can't do today's job with yesterday's methods and expect to be in business tomorrow.

YDreams is a Portuguese company that creates interactive experiences and products based on advanced technology and design. By combining the most recent advances in computing, image processing and motion interfaces, YDreams conceives spaces for information exploration suited to anything from store showrooms, to cultural exhibitions, to fair booths. Founded in 2000 and headquartered in Madan Parque, Lisbon, with 140 employees the company operates globally from offices in Spain, North America and Brazil. YDreams has worked with multinationals such as Adidas, Vodafone and Nokia, and has been covered in international publications such as the New York Times, Business Week and The Economist. By combining the most recent advances in computing, image processing and motion interfaces, YDreams conceives spaces for information exploration suited to anything from store showrooms, cultural exhibitions or fair booths. The company conceives and commercializes products, solutions and services for markets ranging from advertising to cultural spaces and mobile games. The ultimate goal is offer the public a way to experience and access information in surprising ways.

YDreams' opened its North American office in Austin, Texas in Summer 2007 with Marta Vieira, Director of Business Development & Operations. Since coming to the US, YDreams has:

- Created a support ecosystem that includes connections with major companies such as Dell, IBM and AMD; formed relationships with UT-Austin research teams; built a partnership with M3 Design in the development of new interactive surfaces; and built relationships with experienced patent lawyers Baker Botts.
- Developed projects in the US for clients such as Petrobrás and Horizon Wind Energy (both located in Houston) and is building major prospects with companies such as Coca Cola, Yahoo, and Panasonic. In the cultural area, YDreams has a strong partnership with the promoters of the Alamo project in San Antonio and other museums in Texas.
- Established a joint venture with Brand Experience Lab in New York City to create Audience Entertainment (www.audienceentertainment.com), a company operating from that city and focused on delivering interactive advertising for movie theatres and other large venues. Brand Experience Lab has major global clients including Volvo, NBA, Yahoo, PEPSI, and ToysRUs.

Market Strategy

Over the years YDreams has been profiled in hundreds of articles, radio and TV shows by both the national and international media, such as Wired Magazine, The Economist, The New York Times, El País, Liberation, La Stampa, Guardian, Financial Times, Herald Tribune, Business Week, Forbes, CNN, and CNBC.

Human resources strategy

140 Employees. At the same time, the company's corporate culture is veered towards excellence and creativity while fostering a relaxed working environment comprised of flexible work hours and laid-back, open work spaces.

Internationalization

YDreams is currently undergoing an expansion process encompassing factors that range from strengthening human resources to targeting new business markets. The company is also consolidating its international presence via affiliate offices in Spain, Brazil and North America (including Austin, Texas), and a network of representatives in Canada, Austria, Morocco, South Africa and Mozambique.

Initial capital (in K€): 50

Mature technology company

B.18 FiberSensing, Sistemas Avançados de Monitorização, S.A.

Characterization

FiberSensing is a leading developer and manufacturer of optical fiber Bragg grating (FBG)-based sensor systems for advanced monitoring applications in markets such as civil and geotechnical engineering, aeronautics, aerospace, and energy production and distribution.

S&T base

Founded in April 2004 as a spin-off from R&D Institute INESC Porto, the company, supported by competencies in fiber optic technology, optoelectronics, digital electronics, and instrumentation, offers technologically advanced solutions while ensuring innovation, quality and reliability.

Human resources strategy

In 2006 FiberSensing had 19 employees, of which 3 were PhDs, 1 master, and 14 graduates, growing to 30 employees in 2008.

Markets

FiberSensing's main technologies – comprising sensors, measurement units, software, and complete solutions – have been exported worldwide to several institutional customers. The company's headquarters are located in Maia, Portugal. There are currently 30 highly specialized employees and a high revenue increase every year.

Internationalization:

The company addressed more than one hundred different monitoring projects around the world and delivered thousands of sensors and measurement units.

Initial capital (in K€): 553 (currently 2,400)

Revenue (in K€): 2009 (expected): 2,608; 2008: 1,630 ; 2007: 1,006; 2006: 454

Exports (in % sales): (% sales): 2009 (expected): 80%; 2008: 74%; 2007: 64%

R&D expenditure (in % sales): 2009 (expected): 12%; 2008: 20%; 2007: 38%; 2006: 80%

Mature technology company

B.20 ISA – Intelligence Sensing Anywhere, S.A.

Characterization

ISA – Intelligence Sensing Anywhere is a well established firm created twenty years ago by five college students who had finished their degrees in physics engineering at the University of Coimbra. Today, all of the founders of this spin-off from the University of Coimbra hold a PhD degree from the same university.

Path

ISA's founders had developed a technology that was the main driver of the firm until 2003. During this initial period, ISA grew efficiently, mainly focusing on this technology which consists of the development of a telemetry system for environmental monitoring. From 2003 until now, it has moved from a micro firm to a medium firm (more than 100 employees) in only 6 years. Its technological breakthrough started in 2000 when it carried out ground-breaking work by developing a universal and noninvasive solid state transmitter for GPL tank (international patent). In 2001, ISA was the first firm in the world to develop a RF transmitter for GPL tanks according to ATTEX.

Now ISA engages in various business areas such as: energy, environment, transportation, safety, and health (its most recent challenge). In 2008, exports were over than 80% of the total sales turnover. Concerning ISA's personnel, two-thirds of employees have a college degree; investment in R&D represents over 15% of turnover; 45 employees are devoted to this R&D.

Human resources strategy

ISA had 26 employees in 2005, of which 4 were PhD's and 18 graduates. At the end of 2008, it had 91 employees, of which 6 were PhD's and 65 had a university degree.

Markets

ISA is an award-winning company specializing in telemetry and M2M (machine-to-machine) communications. The new company's headquarters are located in Estadio Cidade de Coimbra, Coimbra, Portugal. Moreover, ISA has offices in Europe (Spain, France, Germany, UK, Greece, and Turkey), Brazil and Australia and is aiming to enter the US market.

Initial capital (in K€): 10

Revenue (in K€): 2009 (expected): 5,500.0; 2008: 4,909.0; 2007: 4,011.0; 2005: 2,178.0

Exports (in % sales): 70%; 2008: 80%; 2007: 85%; 2005: 53%

R&D expenditure (in % sales): 2009 (expected): 20%; 2008: 30%; 2007: 20%; 2006: 40%

5.2 Technologies in commercialization

Table 5.C. Technologies in commercialization

Examples of technologies in pre-commercialization & commercialization phases with relevant research potential

Sector	Ref	Technology	Firm
Agri/Food	C.1	OleoTest	Castro, Pinto & Costa, Lda.
Bio/Pharma	C.2	Biomaterials and Stem Cell Therapies	Biosckin S.A. & Medmat Innovation
	C.3	Carbon monoxide releasing molecules	Alfama, Inc
	C.4	Global Platform Screening for Drug Discovery (GPS D2)	Bioalvo, S.A.
Digital Media	C.5	eBookplus (Digital Book)	Editonweb
	C.6	Intelligent Digital Signage Networks	Xarevision
	C.7	MXF material exchange format	Mog Solutions
Energy	C.8	Double Sun	WS Energia
	C.9	Fuel Cells (SRE stacks)	SRE*
	C.10	Power Line Maintenance Inspection	Albatroz Engineering
Environment	C.11	Mechanical or Electrostatic ReCyclone Systems for high Efficient Particle Capture	Advanced Cyclone Systems, S.A
ICT/ Software	C.12	Bluetooth Hotspots for proximity marketing	Spectral Blue
	C.13	Digital gaming applications / 3D	Vectrlab, S.A.
	C.14	EdgeBOX	Critical Links
	C.15	ePaper Digital Kiosk	Metatheke
	C.16	Human Body 3D	Take the Wind
	C.17	HVD – High video recorder	EXVA
	C.18	Improve	Critical Manufacturing
	C.19	Instant location sharing	Wizi
	C.20	ISVV – Independent Software Verification & Validation	Critical Software
	C.21	Maeil Transporter	Maeil Consultores
	C.22	SituAction	Ubisign
	C.23	Structural Composite Poles in Thermoplastic Matrix	Ownersmark Polight
	C.24	VS2	Critical Materials
	C.25	Web campaign auditing	AuditMark
	C.26	WIT Communication Suite	Wit software

Development status	Intellectual property protection strategy	Potential markets
Established	Brand	Spain, Greece, UK and France
Established	Patenting	
Pre-commercialization		
Early commercialization		Spain and Italy
Prototype	Trademark "Alfama"; patenting	USA
Early commercialization	Patenting	Pharma: Europe and USA
Early commercialization	Patent registered	
Early commercialization	Patent and trademark	EUA, Italy, Spain, Greece
Pre-commercialization	Patent registered	
Early commercialization	Secrecy	Spain
Early commercialization	Patenting	
Pre-commercialization		
Early commercialization		
Early commercialization		USA, UK
Early commercialization	Trademark	
Early commercialization	Copyright	Spain and Brazil
Early commercialization		
Pre-commercialization		
Early commercialization		
Established		European Space Agency (ESA)
Established	Brand registered	UK, Netherlands, Spain, Germany, Angola
Early commercialization		
Pre-commercialization	National patent in appreciation	
Pre-commercialization	Patenting	
Pre-commercialization		
Established		Portugal, Germany, Spain, South Africa, USA, Italy, Czech Republic, Turkey, United Kingdom, Austria, France, Chile, Canada, Luxembourg

Table 5.C. (continued) Technologies in commercialization

Sample technologies in Pre-commercialization & commercialization phases with relevant research potential

Sector	Ref	Technology	Firm
Manufacturing	C.27	Opencell technology & multimaterial truck cargo bodies	PLY Engenharia Lda
	C.28	Optical fiber Bragg grating based sensor systems for advanced monitoring applications	Fibersensing, Sistemas Avançados de Monitorização, S.A.
Materials	C.29	Composite materials used in musical instruments	IDEIA.M, Lda.
Medical Devices/ Diagnostics	C.30	3DPectus System	iSurgical3D & automation
	C.31	bioPlux	PLUX
	C.32	bioPlux motion	PLUX
	C.33	Detection of Hepatitis B virus genetic diversity	GenoMed
	C.34	Detection of HIV and Hepatitis viral genomes in semen before medically assisted procreation	GenoMed
	C.35	HCV Genotype	GenoMed
	C.36	PET - position emission thomography	PETsys
	C.37	powerPlux	PLUX
	C.38	Retmaker	Critical Health
	C.39	VitalJacket- T-Shirt that can continuously monitor the heart rate	Biodevices
Micro-Electronics	C.40	ChangeYourDirection	Tomorrow Options
	C.41	EyeDropper: compliance validation system; medical expert diagnosis	Blueworks – Medical Expert Diagnosis Lda.
	C.42	iLogger – data logging	ISA
	C.43	WalkinSense	Tomorrow's Options
Nanotech	C.44	NETmix	Fluidinova
Textiles	C.45	BodyMe	We Adapt

Development status	Intellectual property protection strategy	Potential markets
Pre-commercialization	Patenting	Finland, US, Spain, France, Brazil
Pre-commercialization	Patenting; registered designs	Worldwide
Established		
Pre-commercialization	Patenting	USA
Established		Greece, UK, Sweden
Early commercialization		
Pre-commercialization		
Pre-commercialization		
Early commercialization / established		
Clinical trials	Patenting	
Established		
Pre-commercialization	Patenting	
Pre-commercialization	Trademark	
Pre-commercialization	Portuguese patent filed	
Pre-commercialization		
Established	According to ATEX Directive	Europe, South America, Canada, Oceania, Iran and New Zealand
Early commercialization	PCT filled, trademark registered (Europe and USA)	
Early commercialization	Patent	
Pre-commercialization	Patent	USA

Agro/Food

C.1 OleoTest

Technology Description

OleoTest is a reliable, fast and inexpensive method to control the quality of food oils. In minutes, these simple tests facilitate reliable evaluation of food oils according to the presence and quantity of polar compounds (extremely harmful to human health). The reliability of these tests is confirmed through continuous independent laboratory analyses. OleoTest is regularly used for official inspections (such as the General Inspection of Economic Activities) because test results remain stable over time, which allows the findings to be used as legal evidence. OleoTest tests are an important complement in the systems of auto-control of food sector companies (obliged by law, according to European Rule CE 852/2004).

Firm Name: Castro, Pinto & Costa, Lda.

Development Status: Established

Sector of operation: Food and catering industries

IPR: National and international brand registered

Sales Volume: About k€ 180 (2008)

Bio/Pharma

C.4 Global Platform Screening for Drug Discovery (GPS D2)

Technology Description

BIOALVO's proprietary drug discovery platform is based on in vivo assays performed in humanized yeasts. These modified yeast strains express the desired human therapeutic target, having been engineered to possess a DNA sensor, responsive to the presence of this human therapeutic target, which is linked to a reporter gene. The key advantages of this technology are: early identification, better predictability of efficacy, efficiency (HTS ~10,000/week at BIOALVO), cost-savings, adaptability and relevance to multiple targets.

Firm Name: BIOALVO S.A.

Primary Inventors: Helena Veira, Sukalyan Chatterjee

Development Status: Early commercialization

Sector of operation: Research and experimental development in biotechnology

IPR: 1: WO2008/075991 – Yeast construction platform and screening methods

2: WO2008/150186 – DG platform and screening methods

3: BLV03 PCT/PT2009/000019 – BLV200703 and use in neurodegenerative diseases

4: BLV04 PCT/PT2009/000018 – BLV200704 and use in pain

Sales Volume: The technology will only be commercialized during 2009

Digital Media

C.6 Intelligent Digital Signage Networks

Technology Description

Managing large digital signage networks and their content is usually a labor intensive task. So much so, that the promised advantage of matching content to audience, time and location is rarely ever achieved. This artificial intelligence-based technology allows just that, with increased advertising impact at the lowest cost.

Firm Name: Xarevision

Primary Inventors: Sílvio Macedo, João Paulo Rodrigues

Development Status: Early commercialization

Sector of operation: Digital publicity

IPR: None

Sales Volume: 50% of total firm's sales

Digital Media

C.7. MXF material exchange format

Technology Description

This group of technologies facilitates dealing with different image storing formats.

Firm Name: Mog Solutions

Primary Inventor: Mog Solutions

Development Status: Early commercialization

Sector of operation: Media

IPR: None. Proprietary software with royalties

Sales Volume: 100% of total firm's sales

Energy

C.8 Double Sun

Technology Description

This group of technologies facilitates dealing with different image storing formats.

Firm Name: Mog Solutions

Primary Inventor: Mog Solutions

Development Status: Early commercialization

Sector of operation: Media

IPR: None. The software is proprietary and customers pay royalties.

Sales Volume: 100% of total firm's sales.

Energy

C.10 Power Line Maintenance Inspection

Technology Description

DoubleSun® is a solar concentration technology that integrates precise tracking with 2 X flat reflective optics. DoubleSun® products can be used with any standard photovoltaic module. When compared to standard rooftop applications, the annual energy gain obtained by 1kWp of modules within DoubleSun® solar concentrators oscillates between +78% and +84%, depending on location. When compared to 2-axis trackers, DoubleSun® solar concentrators guarantee an annual energy gain between +20% and +32%, depending on location.

Firm Name: WS Energia

Primary Inventors: Gianfranco Sorario, João Wemans, and Rodrigo Rodrigues

Development Status: Early commercialization

Sector of operation: Solar energy

IPR: Patent and trademark

Sales Volume: 100% of sales volume of WS-Energia is due to this technology, of which 30% is direct sales while 70% is services associated with the technology

Environment

C.11 Mechanical or Electrostatic ReCyclone Systems for high Efficient Particle Capture

Technology Description

Advanced Cyclone Systems developed a new generation of cyclone systems for particulate matter (PM) emission control in high temperature industrial systems. ReCyclone Systems® achieve up to 99% collection efficiencies with low investment costs. They require low field power, are immune to particle resistivities and "back-corona," increase efficiency, and can operate with glowing particles and high temperatures.

Firm Name: Advanced Cyclone Systems, S.A.

Primary Inventor: Romualdo Salcedo

Development Status: Early commercialization

Sector of operation: Renewable energy production via biomass combustion (Particulate Matter (PM) emission control; PM emission control in fuel boilers; industrial ambient air cleaning.

IPR: Patents for hurricane geometry: Portugal, Spain, France, UK, Germany and Italy. Patents for mechanical recirculation: Portugal, Spain, France, UK, Germany, Italy, USA and Canada. Patents for electrostatic recirculation: Portugal

Sales Volume: Will be based exclusively on this product

ICT/Software

C.14 EdgeBOX

Technology Description

The first unified communications appliance or "Office-in-a-Box" that combines all the vital voice and data communication services required by SMB's or branch offices, in a single easy-to-use device. Reduced cost at many levels:

- Setup (hours vs. days or weeks)
- Equipment to 1/3 of multi-device purchases
- Operation and management reduced by 50%
- Communication costs reduced by 60% using latest VoIP technology
- Energy, cooling and physical space
- Peripherals (and vendor lock-in) by using off-the-shelf /open standards
- Increases competitiveness and productivity with "big-company" services

Firm Name: Critical Links

Development Status: Early commercialization

Sector of operation: ICT - Software

IPR: Secrecy

Sales Volume: Worldwide serves a rapidly-growing client base of an estimated 100,000 users being served by edgeBOX on five continents.

ICT/Software

C.15 ePaper Digital Kiosk

Technology Description

This technology allows publishers to sell their newspapers and magazines in digital format, called ePaper.

Firm Name: Metatheke Software Lda.

Primary Inventor: Metatheke Software Lda.

Development Status: Early commercialization

Sponsor Institution: Incubator at Aveiro University

Sector of operation: Press and publishing

IPR: Trademark

Sales Volume: 25,000€

ICT/Software

C.16 Human Body 3D

Technology Description

3D models with high realistic textures from human anatomy to physiology

Firm Name: TAKE THE WIND, Lda.

Primary Inventor: TAKE THE WIND, Lda.

Development Status: Early commercialization

Sector of operation: Industry

IPR: Copyright

Sales Volume: Responsible for over 80% of total sales turnover

ICT/Software

C.20 ISVV – Independent Software Verification & Validation

Technology Description

ISVV is targeted at safety-critical software systems and aims to increase the quality of software products, thereby reducing risks and costs through the operational life of the software. ISVV provides assurance that software performs to the specified level of confidence and within its designed parameters and defined requirements.

Firm Name: Critical Software

Development Status: Established

Sector of operation: Space Industry

IPR: Secrecy

ICT/Software

C.21 Mael Transporter

Technology Description

Liner Agencies and Freight Forwarders face major challenges. Rapidly rising costs, expanding regulations, electronic communications, and increasing speed and complexity of the supply chain, are just some issues faced by these firms. Mael Transporter is the right solution to extinguish these issues, enabling direct and easy access to business information, and increasing agency performance.

Firm Name: Mael Consultores, TIE, Lda.

Primary Inventor: Mael Consultores

Development Status: Established

Sector of operation: Software development and consultancy

IPR: Brand registered (Mail Transporter)

Sales Volume: Around 50% of total sales turnover

Main foreign clients: UK, Netherlands, Spain, Germany, and Angola

Manufacturing

C.27 Opencell Technology & Multimaterial Truck Cargo Bodies

Technology Description

Opencell is an evolutionary lightweight product that can be manufactured in almost any material, in curved and free form design, with symmetrical strength, fully accessible for mechanical and electronic equipment installations and maintenance, and readily producible with current manufacturing processes at a lower cost for manufacturing and reduced product life cycle costs. Opencell structural panels with a cellular core have a wide range of applications such as bus/rail, truck, naval, aeronautical, noise barriers, roofing, temporary structures, security, fire doors, blast/ballistic protection, thermal barriers, thermal solar panels, wave technology, wind towers, aeronautical, marine, cargo pallets, and others.

Firm Name: Ply Engenharia, Lda.

Primary Inventor: António Valente

Development Status: Research & Development / Early commercialization

Sector of operation: Mechanical engineering

IPR: Patented technology: PCT publ. No WO/2009/034226 panel structure

Sales Volume: All sales are expected to be based on the Opencell technology

Manufacturing

C.28 Optical Fiber Bragg Grating Based Sensor Systems for Advanced Monitoring Situations

Technology Description

Fiber Bragg Grating (FBG) sensors offer intrinsic multiplexing capability that allows the concatenation of a large number of transducers in a single optical fiber, for remote sensing up to 10 km, immune to EMI and RFI with no risk of current leakage or ignition and are therefore suitable for hazardous locations and large scale sensing networks. FiberSensing measurement units feature a software interface with built-in datalogger functions. A high-performance local database manages both multiple sensor network configurations and large data sets. Data can be exported to analysis tools through Excel™ compatible files. FiberSensing measurement units are based on industrial PC components, running Windows™ XP embedded for maximum compatibility and expandability, and can be run on a personal computer.

Firm Name: Fibersensing, Sistemas Avançados de Monitorização, S.A.

Primary Inventor: Fibersensing

Development Status: Early commercialization

Sector of operation: Civil Engineering

IPR: Patent

Sales Volume: All sales are based on the Fiber Bragg Grating technology

Medical Devices/Diagnostics

C.30 3DPectus System

Technology Description

System for automatic and personalized modelling/bending of surgical prosthesis for correction of pectus excavatum based on pre-surgical radiology information (CT Scan). This technology allows a faster, more accurate surgical intervention, as well as a reduction in recovery time.

Firm Name: iSurgical3D & Automation

Primary Inventor: João Luís Araújo Martins Vilaça

Development Status: Pre-commercialization

Sector of operation: Medical Devices

IPR: Patenting - PT2008/103824 and WO2009/035358

Sales Volume: 1000 services/year

Medical Devices/Diagnostics

C.31 bioPLUX

Technology Description

Wireless and miniaturized signal acquisition system designed to meet the needs of the biosignals research community. It has 8 analog acquisition channels (6 with 1kHz sampling frequency and 2 with 125 Hz), allowing the acquisition of different kinds of electrophysiological signals. The raw data are sent via Bluetooth protocol to the computer. It has a programming API for the development of new applications using PLUX software. This signal acquisition unit also has great applicability in the healthcare area, particularly in physical therapy. For this purpose, innovative biofeedback software was designed to accompany the acquisition unit and electromyography sensors. This kit has applicability in muscular rehabilitation work at the clinic or at home.

Firm Name: PLUX – Biosignal Engineering

Primary Inventor: PLUX

Development Status: Established

Sector of operation: Healthcare

IPR: None

Sales Volume: Responsible for 72% of total sales turnover

Main foreign clients: Greece, UK, Sweden

Medical Devices/Diagnostics

C.32 bioPLUX Motion

Technology Description

bioPlux motion is an autonomous device with an integrated xyzPlux triaxial accelerometer. With its compact dimensions, ultra-light weight, high portability and versatility, bioPlux motion can be comfortably used in the pocket, while the signal measured by its triaxial accelerometer is being acquired in real time. Thanks to the transmission of the data to the computer via Bluetooth, this device sets the user free of any kind of wires.

Firm Name: PLUX – Biosignal Engineering

Primary Inventor: PLUX

Development Status: Early commercialization

Sector of operation: Sports, healthcare, and research

IPR: None

Sales Volume: Responsible for 3% of total sales turnover

Medical Devices/Diagnostics

C.33 Detection of Hepatitis B Virus Genetic Diversity

Technology Description

The technology allows for the investigation of the genetic diversity of HBV in infected patients and the identification of mutations conferring resistance to lamivudine, adefovir, and entecavir, with higher sensitivity than commercial methods currently available. Additionally, the technology provides direct sequence information of the viral polymerase, which is a preferential target for mutations involved in drug resistance. Thus, while current methods are limited to screens for known mutations, this technology allows immediate detection of emerging novel mutations.

Firm Name: GenoMed – Diagnósticos de Medicina Molecular, S.A.

Primary Inventor: Rute Marcelino (M.Sc.)

Development Status: Pre-commercialization

Sector of operation: Other human health activities

IPR: None

Sales Volume: 46,130 EUR

Medical Devices/Diagnostics

C.34 Detection of HIV & Hepatitis Viral Genomes in Semen before Medically Assisted Procreation

Technology Description

Couples where the male is infected with HIV-1 or Hepatitis virus may use medically assisted procreation in order to conceive a child without contaminating the female partner. For this, it is crucial to process the semen and to test it for the presence of viruses. At present there are no commercially available tests to detect these viruses specifically in seminal plasma. GenoMed is developing a new technology to address this need. Technical improvements are developed to produce an assay that quantifies with high sensitivity viral genomes in semen.

Firm Name: GenoMed – Diagnósticos de Medicina Molecular, S.A.

Primary Inventor: Rute Marcelino (M.Sc.)

Development Status: Pre-commercialization

Sector of operation: Other human health activities

IPR: None

Medical Devices/Diagnostics

C.35 HCV Genotype

Technology Description

This technology was designed to genotype Hepatitis C virus, which exhibits strong prognostic value on a patient's response to therapy. This method amplifies viral nucleic acids extracted from patient's plasma samples. The amplification product is then sequenced and the result obtained is used to determine the genotype with the help of bioinformatics programs

Firm Name: GenoMed – Diagnósticos de Medicina Molecular, S.A.

Primary Inventor: Rute Marcelino (M.Sc.)

Development Status: Early commercialization / Established

Sector of operation: Other human health activities

IPR: None

Sales Volume: 181,742.40 EUR

Medical Devices/Diagnostics

C.36 PET – Position Emission Tomography

Technology Description

PET stands for Positron Emission Tomography. The main objective of PETsys is to develop a PET scanner (already in the clinical trials phase) to detect breast cancer earlier with higher resolution (1 mm against 5-10 mm of the standard devices) and with a higher sensibility (x10).

Firm Name: PETsys, Medical PET Imaging Systems, S.A.

Primary Inventor: João Varela

Development Status: Clinical trials starting at IPO (Porto)

Sponsor institutions: LIP, INESC-ID, INESC-INOV, IBEB (FCUL), INEGI, IBILI, HGO, IPO

Sector of operation: Medical Devices (diagnostics, non-intrusive)

IPR: Portuguese patent (INPI) and PCT

Microelectronics

C.41 EyeDropper: Compliance Validation System; Medical Expert Diagnosis

Technology Description

BlueWorks is currently developing a device able to aid patients in the task of applying eyedrops, while simultaneously gathering reliable data to allow physicians to evaluate patient compliance. EyeDropper is a system to objectively assess patient compliance during ocular drops instillation therapy. The device determines instillation success, user eye (left or right), and records date and time of event. The main targets for this product are clinical trials – pharmaceutical companies, contracted research organizations.

Firm Name: Blueworks – Medical Expert Diagnosis Lda

Primary Inventor: António Travassos / Blueworks

Development Status: Research and development/Pre-commercialization

Sector of operation: Medical devices / diagnosis

IPR: Portuguese patent pending, advancing for PCT

Sales Volume: Will be based, to a large extent, based on this product – Portugal in first commercial phase, worldwide in second (starting in USA)

Microelectronics

C.42 iLogger – Data Logging

Technology Description

iLogger is a multi-purpose autonomous (GSM/GPRS based, battery powered) remote management system providing data logging, automatic reading and alarms. ISA commercializes this technology in around 20 countries: Spain, France, Greece, Belgium, UK, Turkey, Germany, Argentina, Chile, Brazil, Australia, New Zealand, Iran, Netherlands, Canada, and Saudi Arabia.

Firm Name: ISA – Intelligence Sensing Anywhere, S.A.

Primary Inventor: ISA – Intelligence Sensing Anywhere, S.A.

Development Status: Established

Sector of operation: Manufacturer of electrical and optical equipment

IPR: ATEX directive

Sales Volume: Responsible for 40% of material sales and 70% of services sales volume of the firm



6. Valorization of IP: Brief watch on Portuguese patents

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“INPI considers the UTEN network an outstanding opportunity to enhance skills in technology valorization and to take an active role in the creation of a sustainable network of technology transfer offices in Portugal. As a partner of the UTEN program, I would like to emphasize the great importance and extreme relevance that this project has in Portugal in the field of IPR valorization.”

– António Campinos, President of the Portuguese Institute of Industrial Property (INPI)



Ply Engenharia, Lda. has patented its open-cell technology, shown above: PCT publ. No. WO/2009/034226 Panel Structure.

In Portugal, university national patent applications have increased consistently over the last four years. One of the most important contributors to this achievement is the active promotion of the importance of intellectual property (IP) performed by university-based TTOs. On an individual level, IST (Instituto Superior Técnico) has been leading in the number of national applications, see Table 6.1. Other

universities, such as the University of Porto and Minho, are also increasing their national portfolio of patents, mainly due to a recent concentration on the strategy of wealth creation through technology transfer and licensing of their own scientific breakthroughs. Similarly, other higher education institutions also reinforce this trend including the contributions of the Polytechnic Institutes.

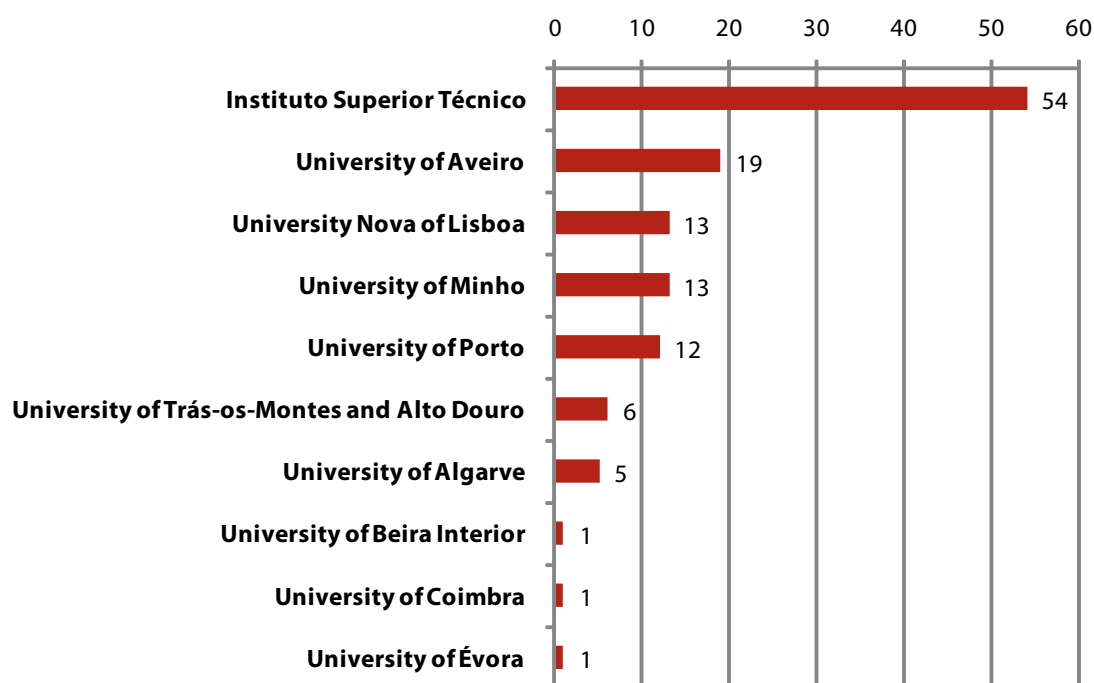
Table 6.1 University national patent applications, 2004 to 2008

Source: INPI (Portuguese Institute of Industrial Property)

University	2004	2005	2006	2007	2008
University of Aveiro	1	6	12	5	19
University of Minho	5	12	8	12	13
University of Évora	2	1	3	4	1
University of Porto	3	4	12	8	12
University of Coimbra	3	3	2	1	1
University of Algarve	-	2	3	2	5
University Nova of Lisboa	1	5	3	13	13
University of Beira Interior	-	-	1	2	1
University of Trás-os-Montes and Alto Douro	-	-	1	8	6
Instituto Superior Técnico	16	19	35	43	54
Other	3	3	4	10	14
TOTAL	34	55	84	108	139

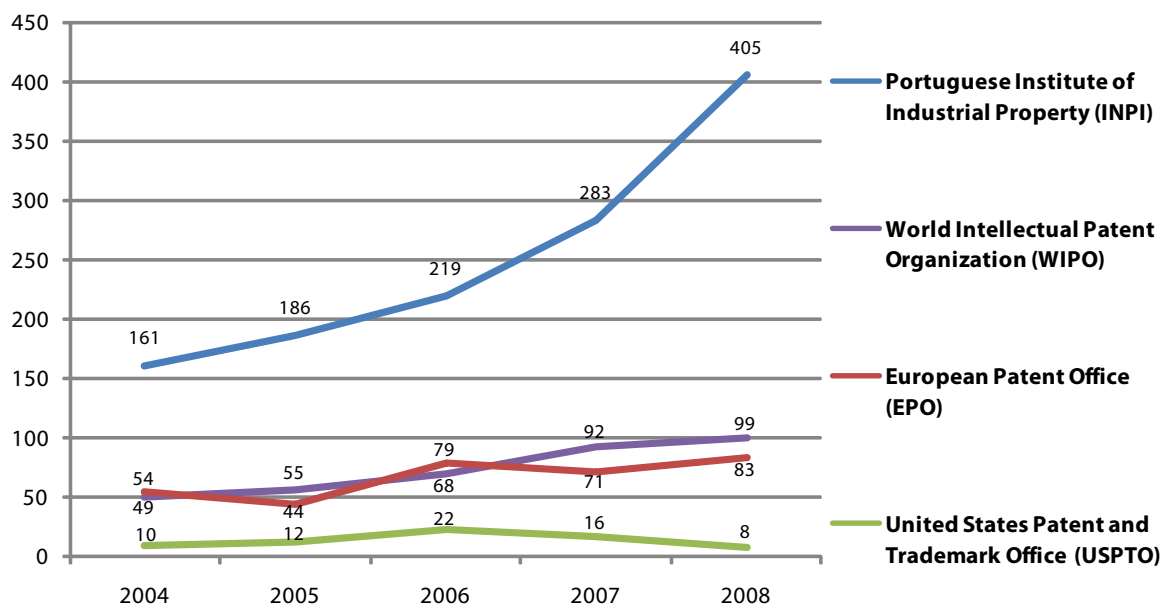
Figure 6.1 shows that IST has been the leading institution in regards to the number of national patent applications in 2008, with 35 applications more than the University of Aveiro, followed by the University of Minho with 13 national applications.

Figure 6.1 University national patent applications 2008



Source: INPI (Portuguese Institute of Industrial Property)

Figure 6.2 National and international patent applications, 2004 - 2008



Source: INPI, EPO, USPTO, and WIPO

As shown in Figure 6.2, except for the United States, the national and international patent applications by Portuguese applicants have been increasing since 2004. The latest years have shown a steep rise in national patent applications, especially during the last two years. In addition, there is a sustained upward trend in regards to European patents and international PCT patents as well.

In 2008, EPO has published 86 patents in various technology areas from Portuguese applicants, from companies, higher education and R&D institutions, and individual inventors. The majority of these applications came from SME companies, followed by universities, and then by individuals.

In 2008, WIPO has published 158 PCT patents from Portuguese applicants. These have covered a great many technology areas and were filed by companies, universities, R&D centers, and independent inventors. Again, most applications were filed by SME companies, followed by universities, and then by individuals.

Eight US patents were filed in 2008 by Portuguese applicants; seven of those were from companies and one from the University of Minho. Both Ydreams and Daviplant were responsible for two applications each.

Tables 6.2 (EPO Patents), 6.3 (WIPO Patents), and 6.4 (US Patents) follow, in order to provide a brief overview of patent information.

Table 6.2 EPO published patent applications by Portuguese applicants (2008)

Source: INPI (Portuguese Institute of Industrial Property)

Title	Publication number	Publication date
PAINT SPRAY BOOTH WITH WATER CURTAIN	EP1972383 (A1)	24-09-08
TUNNEL SUPPORTED ON BEARING BLOCKS	EP2004956 (A1)	24-12-08
FUEL CONSUMPTION REDUCER, HEATED BY HEAT CHAMBER IN THE TURBO COLLECTOR	EP1878905 (A2)	16-01-08
A PROCESS FOR THE PREPARATION OF 10,11-DIHYDRO-10-OXO-5H-DIBENZ[B,F]AZEPINE-5-CARBOXAMIDE	EP1958938 (A2)	20-08-08
CHEMICAL COMPOSITION AND PROCESS FOR TREATING GEOTECHNICAL SLURRIES	EP1950181 (A1)	30-07-08
CHEMICAL COMPOSITION AND PROCESS FOR TREATING LIQUID DISPERSIONS	EP1950180 (A1)	30-07-08
SULPHONYLATED DIPHENYLETHYLENEDIAMINES, METHOD FOR THEIR PREPARATION AND USE IN TRANSFER HYDROGENATION CATALYSIS	EP1935880 (A1)	25-06-08
COMBINED FIXATION BONE IMPLANT	EP1996119 (A2)	03-12-08
ADJUSTING MECHANISM	EP1989078 (A2)	12-11-08
WIRELESS MULTISERVICE PAYMENT SYSTEM FOR VEHICLES	EP1944736 (A1)	16-07-08
STRUCTURE IN INOX FOR PRESERVATION OF PACKED GAS BOTTLES	EP2008939 (A1)	31-12-08
CONTAINER FOR LIQUIDS	EP2008946 (A1)	31-12-08
SYNTHESIS AND APPLICATION OF A FAMILY OF NEW MATERIALS RESULTING FROM THE CHEMICAL CROSS-LINKING BETWEEN GELATINE AND ORGANIC SALTS	EP2006321 (A1)	24-12-08
PREPARATION OF ESLICARBAZEPINE AND RELATED COMPOUNDS BY ASYMMETRIC HYDROGENATION	EP2004610 (A1)	24-12-08
USE OF 5H-DIBENZ[B,F]AZEPINE-5-CARBOXAMIDE DERIVATIVES IN THE TREATMENT OF NEUROPATHIC PAIN AND NEUROLOGICAL DISORDERS	EP2004195 (A1)	24-12-08
NETWORK CORE ACCESS ARCHITECTURE	EP2003571 (A2)	17-12-08
VACCINE AGAINST STREPTOCOCCUS AGALACTIAE INFECTION USING NATIVE OR RECOMBINANT S. AGALACTIAE GLYCERALDHEYDE-3-PHOSPHATE DEHYDROGENASE (GAPDH) AS A TARGET ANTIGEN	EP2001506 (A2)	17-12-08
PROCESS FOR THE MANUFACTURE OF A CROSSBEAM FOR MOTOR VEHICLES AND THE RESPECTIVE CROSSBEAM	EP2000393 (A1)	10-12-08
FUNGAL BIOCATALYSIS PROCESS IN A CULTURE MEDIA CONTAINING WATER MISCIBLE IONIC LIQUIDS	EP1995305 (A1)	26-11-08
PROCESS FOR BIOMASS PRODUCTION FROM RESIDUE AND INDUSTRIAL EFFLUENTS, IN PARTICULAR FROM TIMBER, CORK AND CELLULOSE INDUSTRIES	EP1995298 (A1)	26-11-08
USE OF INHIBITORS OF SCAVENGER RECEPTOR CLASS PROTEINS FOR THE TREATMENT OF INFECTIOUS DISEASES	EP1991215 (A1)	19-11-08
HYDRAULIC PUMP SYSTEM WITH INTEGRATED DISTRIBUTOR VALVE	EP1985859 (A2)	29-10-08
CASE FOR LOCKING AND GUIDING THE SPRING FOR V-BRAKE BICYCLE BRAKING SYSTEMS	EP1984234 (A1)	29-10-08
DRUG COMBINATIONS	EP1983982 (A1)	29-10-08
CHEESEMAKING APPARATUS	EP1982582 (A2)	22-10-08
TABLE SYSTEM	EP1981370 (A1)	22-10-08
PALLET CONTAINER	EP1982924 (A1)	22-10-08
NOVEL ANAEROBIC REACTOR FOR THE REMOVAL OF LONG CHAIN FATTY ACIDS FROM FAT CONTAINING WASTEWATER	EP1981814 (A2)	22-10-08
MODULAR CONTAINER SYSTEM	EP1976372 (A1)	08-10-08
CUMG2-YLIX ALLOY FOR HYDROGEN STORAGE	EP1974406 (A1)	01-10-08
INTERCHANGEABLE SUPPORT SYSTEM FOR MULTI-COMPONENT INJECTION MOLDS	EP1973721 (A2)	01-10-08

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Table 6.2 (continued) EPO published patent applications by Portuguese applicants (2008)

Title	Publication number	Publication date
CONNECTING ELEMENT FOR A BOWDEN CABLE SHEATH	EP1966498 (A1)	10-09-08
POLYMER FOAM COMPOSITION CONTAINING A BIODIESEL	EP1963410 (A2)	03-09-08
X-RAY IMAGING MATRIX WITH LIGHT GUIDES AND INTELLIGENT PIXEL SENSORS, RADIATION OR HIGH ENERGY PARTICLE DETECTOR DEVICES THAT CONTAIN IT, ITS FABRICATION PROCESS AND ITS USE	EP1963885 (A2)	03-09-08
EXPRESSION OF AN ACTIVE CARRIER FOR XYLOSE IN GENETICALLY MODIFIED SACCHAROMYCES CEREVISIAE	EP1960424 (A2)	27-08-08
2,3,4,5-TETRAHYDROXY-6-SULFOOXYHEXANOIC ACID AND ITS METAL SALTS FOR MEDICAL USE	EP1957444 (A2)	20-08-08
AGING PROCEDURE FOR FABRICS USING REDUCING OR OXIDIZING DISCOLORATING AGENTS SPRAY APPLIED	EP1957702 (A1)	20-08-08
NON-INVASIVE BATTERY RECHARGER FOR ELECTRONIC CARDIAC IMPLANTS	EP1951371 (A1)	06-08-08
MORTARS SUITABLE FOR THERMIC AND ACOUSTIC ISOLATIONS COMPRISING CORK AND AERIAL LIME WHICH IS OPTIONALLY HYDROPHOBIZED	EP1950187 (A2)	30-07-08
FOLDING CHASSIS FOR CHILDREN PUSHCHAIR	EP1946991 (A2)	23-07-08
SUPPORT ELEMENT WITH ADJUSTABLE LATERAL SUPPORTS	EP1945479 (A1)	23-07-08
DEVICE FOR APPLICATION OF A LIQUID SUBSTANCE FOR FILM COATING AND ITS USE IN MEASURING OF THE APPLICABILITY CHARACTERISTICS OF A COATING FILM	EP1945375 (A1)	23-07-08
A FIXING SYSTEM FOR JOINTS, FINISHING PROFILES AND DECORATIVE PROFILES	EP1943397 (A1)	16-07-08
A FIXING SYSTEM FOR FINISHING AND DECORATIVE PROFILES	EP1937912 (A1)	02-07-08
ADJUSTING MECHANISM	EP1934490 (A2)	25-06-08
DEVICE FOR FLOCK APPLICATION AND PROCEDURE THEREOF	EP1931481 (A1)	18-06-08
LIQUID MEDIA FOR CHLAMYDOSPORE PRODUCTION OF THE FUNGUS POCHONIA CHLAMYDOSPORIA	EP1928998 (A2)	11-06-08
PROCESS AND DEVICE FOR SEPARATION OF LIQUIDS EMULSIFIED IN MIXTURES OF LIQUIDS AND GASES DISSOLVED IN MIXTURES OF LIQUIDS AND GASES BY LOCALIZED PRESSURE REDUCTION	EP1928568 (A2)	11-06-08
MODULE AND HEATING DEVICE WITH AN INERTIAL MASS MADE BY COMPACTING A METALLIC POWDER OR METALLIC CHIPS	EP1931175 (A1)	11-06-08
A COLLAPSIBLE SUPPORT STAND	EP1925763 (A2)	28-05-08
METHOD AND DEVICE FOR THE MEASUREMENT AND IDENTIFICATION OF BIOFILMS AND OTHER DEPOSITS USING VIBRATION	EP1922543 (A2)	21-05-08
ADAPTATION OF THE COVER OF ELECTRICAL VEHICLES FOR ENERGY SUPPLY BY MEANS OF OA INTEGRATED PHOTOVOLTAIC SOLAR SYSTEM	EP1923919 (A1)	21-05-08
CONTROL DEVICE FOR FLUSH TANK DRAIN VALVES	EP1921215 (A2)	14-05-08
ADJUSTMENT DEVICE FOR A CONTROL CABLE	EP1920163 (A1)	14-05-08
A HEAT EXCHANGER, IN PARTICULAR AN INTERCOOLER FOR MOTOR VEHICLES	EP1921413 (A1)	14-05-08
CONDUCTOR WIRE PROPERTIES DETECTOR	EP1920241 (A1)	14-05-08
ASYMMETRIC CATALYTIC REDUCTION OF OXCARBAZEPINE	EP1915346 (A1)	30-04-08
ROTATING DRUM OF VENDING MACHINES WITH MONEY BOX	EP1916634 (A1)	30-04-08
HOLDER FOR PLANT CONTAINERS	EP1913808 (A2)	23-04-08
SILYL-PROTECTED HYDROXYMETHYL-CARBAMOYLALKYL-KETONES AS INTERMEDIATES IN THE PREPARATION OF DOPAMINE-BETA-HYDROXYLASE INHIBITORS	EP1914233 (A1)	23-04-08
BIOSORPTION SYSTEM PRODUCED FROM BIOFILMS SUPPORTED ON FAUJASITE (FAU) ZEOLITE, PROCESS OBTAINING IT AND ITS USAGE FOR REMOVAL OF HEXAVALENT CHROMIUM (CR (VI))	EP1912905 (A1)	23-04-08
NON-POROUS POLYVINYLIDENE FLUORIDE (PVDF) FILMS IN THE BETA PHASE AND PROCESSING METHOD THEREOF	EP1913082 (A2)	23-04-08
METHOD OF OBTAINING A NATURAL HYDROXYTYROSOL-RICH CONCENTRATE FROM OLIVE TREE RESIDUES AND SUBPRODUCTS USING CLEAN TECHNOLOGIES	EP1910257 (A2)	16-04-08
SELECTIVE ACCELERATION OF FRAGMENTATION THROUGH JOINT APPLICATION OF ENZYMES AND ULTRASOUND	EP1910551 (A2)	16-04-08

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Table 6.2 (continued) EPO published patent applications spin-off by Portuguese applicants (2008)

Title	Publication number	Publication date
STEERING, SUSPENSION AND FIXATION SYSTEM FOR MOTORCYCLE WHEELS	EP1910159 (A1)	16-04-08
PROTEIN 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	EP1907550 (A2)	09-04-08
NITROCATECHOL DERIVATIVES AS COMT INHIBITORS	EP1907382 (A1)	09-04-08
SYSTEM FOR AUTOMATIC DETECTION OF FOREST FIRES THROUGH OPTIC SPECTROSCOPY	EP1904987 (A1)	02-04-08
FLUORESCENT POLYMERS SOLUBLE IN AN AQUEOUS SOLUTION AND A METHOD FOR THE PRODUCTION THEREOF	EP1899434 (A1)	19-03-08
ALL WEATHER COOKING SYSTEM	EP1899650 (A1)	19-03-08
SOLAR COLLECTOR	EP1896783 (A1)	12-03-08
METHOD FOR THE PRODUCTION OF WINE AND WINE OBTAINED FROM SUCH METHOD	EP1892286 (A1)	27-02-08
DNA FRAGMENTS, PRIMERS AND METHOD FOR AMPLIFICATION OF THE DNA FRAGMENTS AND KIT INCLUDING THE AFOREMENTIONED PRIMERS FOR THE DETECTION AND IDENTIFICATION OF CLINICALLY RELEVANT CANDIDA SPECIES	EP1888745 (A2)	20-02-08
PROCESS FOR PREPARATION OF ALKYL AND ALCOXYALKYL-ALPHA -CYANOACRYLATES BY DEPOLYMERISATION OF POLY(ALKYL-ALPHA CYANOACRYLATES) OR POLY(ALCOXYALKYL-ALPHA -CYANOACRYLATES) AND ITS USAGE AS TECHNICAL AND/OR MEDICAL ADHESIVE	EP1885690 (A2)	13-02-08
PNEUMATIC OR HYDRAULIC TELESCOPIC SYSTEM FOR PYLONS OR CHAIR LIFT STATIONS, GONDOLA LIFTS AND THE LIKE	EP1885590 (A1)	13-02-08
PANEL FOR SHUTTER	EP1885985 (A1)	13-02-08
LOW TEMPERATURE STERILISER USING HYDROGEN PEROXIDE VAPOUR	EP1884250 (A1)	06-02-08
PROCESS FOR THE PREPARATION OF POLYHYDROXYLATED STILBENES VIA CLAISEN CONDENSATION	EP1884508 (A1)	06-02-08
EXTERIOR FURNITURE THAT COMBINES THE FUNCTIONS OF CHAIR AND TABLE WITH AN ARTICULATED MECHANISM	EP1882428 (A1)	30-01-08
PROCESS FOR THE PREPARATION, UNDER SUBCRITICAL CONDITIONS, OF MONOLITHIC XEROGELS AND AEROGELS OF SILICA/LATEX HYBRIDS, MODIFIED WITH ALKOXYLANE GROUPS	EP1879690 (A1)	23-01-08
CIC HEARING AID	EP1880573 (A1)	23-01-08
ESLICARBAZEPINE ACETATE AND METHODS OF USE	EP1879590 (A1)	23-01-08
TRACTION KITE WITH NEGATIVE DIHEDRAL	EP1878659 (A2)	16-01-08
SYSTEM FOR THE VISUALIZATION OF INFORMATION SUPERIMPOSED UPON REAL IMAGES	EP1875299 (A1)	09-01-08
MICROCAPSULES WITH FUNCTIONAL REACTIVE GROUPS FOR BINDING TO FIBRES AND PROCESS OF APPLICATION AND FIXATION	EP1871948 (A2)	02-01-08
METHODS FOR TREATING VISUAL DISORDERS	EP1871385 (A1)	02-01-08

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Table 6.3 WIPO published patent applications by Portuguese applicants (2008)

Source: espacenet (EPO), search on WIPO - esp@cenet, 2008 as the publication date AND PT as the applicant

Title	Publication Number	Publication Date
PROCESS FOR OBTAINING STEROIDAL PHOSPHATE COMPOUNDS	WO2008139210 (A2)	20-11-08
SEATING FURNITURE COMPRISING A PIVOTABLE BASE PART	WO2008083956 (A2)	17-07-08
GOLF PUTTER WITH A CIRCULAR, PLAIN, VERTICAL, SMOOTH AND GRADED HEAD	WO2008143538 (A1)	27-11-08
FLUIDIZED SPRAY DRYING	WO2008080167 (A2)	03-07-08
SYSTEMS AND METHODS FOR PROVIDING OPPORTUNISTIC SECURITY FOR PHYSICAL COMMUNICATION CHANNELS	WO2008036633 (A2)	27-03-08
PROPOFOL TRANSPARENT ANESTHETIC SOLUTION WITH A LOW I. V. IRRITATION THRESHOLD	WO2008139313 (A2)	20-11-08
PROBIOTIC	WO2008110325 (A2)	18-09-08
METHOD FOR PROTECTING LOCATION INFORMATION IN WIRELESS COMMUNICATION NETWORKS	WO2008014971 (A2)	07-02-08
METHOD FOR ESTABLISHING A SECRET KEY BETWEEN TWO NODES IN A COMMUNICATION NETWORK	WO2008014958 (A1)	07-02-08
PROCESS OF ELECTROSTATIC RECIRCULATION FOR DEDUSTING AND GAS CLEANING AND DEVICE THEREOF	WO2008147233 (A2)	04-12-08
CRYSTALLINE MINOCYCLINE BASE AND PROCESSES FOR ITS PREPARATION	WO2008102161 (A2)	28-08-08
IMPROVED SUCROSE INVERSION PROCESS	WO2008097878 (A2)	14-08-08
PEPTIDE NUCLEIC ACID (PNA) PROBE, KIT AND PROCEDURE FOR SPECIFIC DETECTION OF HELICOBACTER PYLORI AND APPLICATIONS THEREOF	WO2008155742 (A2)	24-12-08
INTEGRATED ELECTRONIC CIRCUIT INCLUDING A THIN FILM PORTION BASED ON HAFNIUM OXIDE	WO2008155490 (A2)	24-12-08
ACCLIMATIZATION SYSTEM WITH HIGH ENERGY EFFICIENCY	WO2008142661 (A2)	27-11-08
METHOD FOR PRESERVING THE PRIVACY OF NODES IN A NETWORK	WO2008154941 (A1)	24-12-08
TUNNEL MULTI GALLERY	WO2009002199 (A1)	31-12-08
MULTIAXIAL WEAVING MACHINE	WO2009001282 (A1)	31-12-08
KIT AND METHOD FOR THE DETECTION AND IDENTIFICATION OF CLINICALLY RELEVANT YEASTS, USING AN ISOTHERMAL DNA AMPLIFICATION FOLLOWED BY THE HYBRIDISATION TO SPECIES- SPECIFIC OLIGONUCLEOTIDE PROBES, AND RESPECTIVE APPLICATIONS	WO2008135931 (A2)	13-11-08
COLORIMETRIC METHOD AND KIT FOR THE DETECTION OF SPECIFIC NUCLEIC ACID SEQUENCES USING METAL NANOPARTICLES FUNCTIONALIZED WITH MODIFIED OLIGONUCLEOTIDES	WO2008135929 (A2)	13-11-08
METHOD FOR ENABLING NETWORK NODE REDUNDANCY IN AN ACCESS NETWORK, MESSAGES AND NODES	WO2008104497 (A2)	04-09-08
FLOOR CONTROL FOR PUSH-TO-TRANSLATE-SPEECH (PTTS) SERVICE	WO2008064996 (A1)	05-06-08
HIV-1 PROTEASE INHIBITORS	WO2008118849 (A2)	02-10-08

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POMPEU SANTOS SILVINO [PT]	POMPEU SANTOS SILVINO [PT]
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CAMILO TIAGO [PT]; ESTEVES CARVALHO SOFIA RUTE [PT]; HOF AXEL [DE]; PASQUALINI SANDRINE [DE]; DE FRIAS REBELO NUNES PEDRO RICARDO [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; CAMILO TIAGO [PT]; ESTEVES CARVALHO SOFIA RUTE [PT]; HOF AXEL [DE]; PASQUALINI SANDRINE [DE]; DE FRIAS REBELO NUNES PEDRO RI [PT]
MORITZ PETER [DE]; DELGADO JOSE [PT]; PEREIRA PAULO JORGE [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; MORITZ PETER [DE]; DELGADO JOSE [PT]; PEREIRA PAULO JORGE [PT]
ALI AKBAR [US]; ALTMAN MICHAEL D [US]; ANJUM SAIMA GHAFOR [US]; CAO HONG [US]; CHELLAPPAN SRIPRIYA [US]; FERNANDES MIGUEL X [PT]; GILSON MICHAEL [US]; KAIRYS VISVALDAS [LT]; KING NANCY [US]; NALIVAIIKA ELLEN [US]; PRABU MOSES [US]; RANA TARIQ M [US]; GARUDAMMAGARI SAI KIRAN KUMAR REDDY [US]; SCHIFFER CELIA A [US]; TIDOR BRUCE [US]	UNIVERSITY OF MASSACHUSETTS [US]; UNIV MARYLAND BIOTECH INST [US]; MASSACHUSETTS INST TECHNOLOGY [US]; ALI AKBAR [US]; ALTMAN MICHAEL D [US]; ANJUM SAIMA GHAFOR [US]; CAO HONG [US]; CHELLAPPAN SRIPRIYA [US]; FERNANDES MIGUEL X [PT]; GILSON MICHAEL [US]; KAIRYS VISVALDAS [LT]; KING NANCY [US]; NALIVAIIKA ELLEN [US]; PRABU MOSES [US]; RANA TARIQ M [US]; GARUDAMMAGARI SAI KIRAN KUMAR [US]; SCHIFFER CELIA A [US]; TIDOR BRUCE [US]

Table 6.3 (continued) WIPO published patent applications by Portuguese applicants (2008)

Title	Publication Number	Publication Date
DEVICE FOR WAVE-POWERED GENERATOR	WO2008115066 (A2)	25-09-08
DEVICE FOR WAVE -POWERED GENERATOR	WO2008111845 (A2)	18-09-08
PROCESS FOR PREPARING CHROMAN DERIVATIVES	WO2008143540 (A1)	27-11-08
BELT SHAPED PERSONAL FLOTATION DEVICE (PFD) OF AUTOMATIC INSUFFLATION	WO2008143539 (A1)	27-11-08
MODULAR FRAME FOR PAINTINGS	WO2008142626 (A2)	27-11-08
AMINO ACID SEQUENCES DIRECTED AGAINST GROWTH FACTOR RECEPTORS AND POLYPEPTIDES COMPRISING THE SAME FOR THE TREATMENT OF DISEASES AND DISORDERS ASSOCIATED WITH GROWTH FACTORS AND THEIR RECEPTORS	WO2008142165 (A1)	27-11-08
SYNTHETIC CLOSURE WITH MULTIPLE INTERNAL LAYERS, EACH LAYER HAVING A VARIABLE CROSS SECTION (VCS) ALONG THE CLOSURE LENGTH	WO2008114111 (A2)	25-09-08
A SCREENING METHOD FOR COMPOUNDS THAT REDUCE ER STRESS	WO2008150186 (A1)	11-12-08
CONTINUOUSLY VARIABLE TRANSMISSION AND DRIVE MEANS	WO2008148750 (A1)	11-12-08
THERAPY	WO2008085074 (A2)	17-07-08
METHOD TO TRANSMIT MESSAGES BETWEEN A TRANSMITTER AND A RECEIVER WITH THE AID OF A COMMUNICATION SUPPORT	WO2008075313 (A2)	26-06-08
HIGHLY INTEGRATED GPS, GALILEO AND INERTIAL NAVIGATION SYSTEM	WO2008147232 (A1)	04-12-08
DEVICE FOR PIPE FLOW PULSATION	WO2008126027 (A2)	23-10-08
POWDER COATING COMPOSITION	WO2008124089 (A1)	16-10-08
WOOD FLOOR ELEMENT	WO2008140342 (A1)	20-11-08
OPERATING METHOD FOR SHARED PUBLICITY	WO2008140341 (A1)	20-11-08
METHOD AND DEVICE FOR CONTROLLING AND/OR REGULATING THE DRIVES OF A ROLLER ARRANGEMENT	WO2008138691 (A1)	20-11-08
1, 3-DIHYDROIMIDAZOLE- 2 -THIONE DERIVATIVES AS INHIBITORS OF DOPAMINE-BETA-HYDROXYLASE	WO2008136695 (A1)	13-11-08
PROCESS FOR THE PREPARATION OF (R) -5- (2-AMINOETHYL) -1- (6, 8 -DI FLUOROCHROMAN- 5 -YL) -1, 3-DIHYDROIMIDAZOLE-2-THIONE	WO2008094056 (A1)	07-08-08
PROCESS FOR THE PREPARATION OF (R) -5- (2-AMINOETHYL) -1- (6, 8-DIFLUOROCHROMAN-3-YL) -1, 3-DIHYDROIMIDAZOLE-2-THIONE	WO2008094055 (A1)	07-08-08
COMPOUNDS	WO2008094054 (A2)	07-08-08
DOSAGE REGIMEN FOR COMT INHIBITORS	WO2008094053 (A1)	07-08-08
THERAPEUTICAL USES OF ESLICARBAZEPINE	WO2008088233 (A1)	24-07-08
PROCESS	WO2008071951 (A2)	19-06-08
PREPARATION OF POLYHYDROXYLATED STILBENES	WO2008012108 (A2)	31-01-08
METHOD AND APPARATUS FOR MEASURING QUANTITY OF A FLUOROCHROME IN A BIOLOGICAL ENVIRONMENT	WO2008067525 (A2)	05-06-08
ENGINEERED RABBIT ANTIBODY VARIABLE DOMAINS AND USES THEREOF	WO2008136694 (A1)	13-11-08

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SCHWARTZ ABRAHAM [US]; SANTOS BERNARDES RUI MANUEL DI [PT]; FRANCKE STUART [US]; SANTOS MORGADO ANTONIO MIGUEL [PT]	ERIE SCIENT CO [US]; SCHWARTZ ABRAHAM [US]; SANTOS BERNARDES RUI MANUEL DI [PT]; FRANCKE STUART [US]; SANTOS MORGADO ANTONIO MIGUEL [PT]
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Table 6.3 (continued) WIPO published patent applications by Portuguese applicants (2008)

Title	Publication Number	Publication Date
COLLABORATIVE AUTOMATION SYSTEM AND METHOD FOR THE CONTROL THEREOF	WO2008135459 (A2)	13-11-08
METHODS AND INTERMEDIATES FOR SYNTHESIS OF SELECTIVE DPP-IV INHIBITORS	WO2008109681 (A2)	12-09-08
PROCESS FOR ANIMAL SPECIES IDENTIFICATION IN SAMPLES WITH GENETIC MATERIAL BASED ON MITOCHONDRIAL DNA SIZE VARIATION	WO2008056325 (A2)	15-05-08
PRE-FERMENTED SYMBIOTIC MATRIX BASED ON A CEREAL SUSPENSION WITH ENCAPSULATED PROBIOTICS, MANUFACTURE PROCESS AND CORRESPONDING UTILIZATION	WO2008041876 (A2)	10-04-08
TREATMENT OF INFECTIONS BY CARBON MONOXIDE	WO2008130261 (A1)	30-10-08
WASTE TO LIQUID HYDROCARBON REFINERY SYSTEM	WO2008130260 (A1)	30-10-08
SYSTEM AND PROCESS FOR REMOVAL OF PHOSPHOROUS AND AMMONIA FROM AQUEOUS STREAMS	WO2008115758 (A1)	25-09-08
PROCESS FOR ENRICHING THE AROMA PROFILE OF A DEALCOHOLIZED BEVERAGE	WO2008099325 (A2)	21-08-08
GALACTOSE-RICH POLYSACCHARIDE, PROCESS FOR THE PRODUCTION OF THE POLYMER AND ITS APPLICATIONS	WO2008127134 (A1)	23-10-08
COOKING VESSEL, IN PARTICULAR A STEAM PRESSURE COOKING POT	WO2008125690 (A1)	23-10-08
PROCESS FOR THE PRODUCTION OF MIXED-METAL-OXIDE INORGANIC PIGMENTS FROM INDUSTRIAL WASTES	WO2008081397 (A2)	10-07-08
METHOD AND DEVICE FOR LIMITING A NUMBER OF MULTICAST CHANNELS	WO2008119813 (A1)	09-10-08
COMPOSITIONS AND METHODS FOR TREATING CONDITIONS RELATED TO EPHRIN SIGNALING WITH CUPREDOXINS AND MUTANTS THEREOF	WO2008086523 (A2)	17-07-08
AGGLOMERATION PROCESS OF WOOD FIBRES (FIBREBOARD) FOR THE PRODUCTION OF AGGLOMERATE SLABS OR PANELS	WO2008117138 (A1)	02-10-08
INLET DEVICE FOR CENTRAL VACUUM SYSTEM	WO2008117137 (A1)	02-10-08
ROCKING MECHANISM	WO2008103062 (A1)	28-08-08
BISNAPHTHALIMIDOPROPYL DERIVATIVE COMPOUNDS WITH ANTI-PARASITE AND ANTI-CANCER ACTIVITY	WO2008007262 (A2)	17-01-08
YEAST PLATFORM CONSTRUCTION AND SCREENING METHODS	WO2008075991 (A2)	26-06-08
PROCESS OF CORK PRE-EXPANSION BY SUBMISSION TO MICROWAVE RADIATION AND RESULTING PRODUCT THEREOF	WO2008115086 (A1)	25-09-08
PARTICLE AGGLOMERATION PROCESS FOR WOOD AND CORK INDUSTRIAL SECTORS	WO2008114103 (A1)	25-09-08
TANK CONTAINER FOR WATER SUPPLY	WO2008111864 (A1)	18-09-08
NOVEL GENE USEFUL FOR GROWTH CONTROL OF PLANTS	WO2008110303 (A1)	18-09-08
ATTACHABLE PORTABLE ILLUMINATION APPARATUS FOR SURGICAL INSTRUMENTS	WO2008097119 (A2)	14-08-08
THE GYROSCOPE POWER-TAKE-OFF, A SUBMERGED WATERPROOF WAVE ENERGY CONVERTER AND ITS FLOATER TRANSLATION AND WATERPROOF SYSTEMS	WO2008097116 (A2)	14-08-08
PRODUCTION OF HIGH-PURITY CAROTENOIDS BY FERMENTING SELECTED BACTERIAL STRAINS	WO2008108674 (A1)	12-09-08

Inventor/s	Applicant/s
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MACEDO PEREIRA FILIPE ADAO [PT]; KOEHLER VAN ASCH BARBARA JOANA [PT]; RODRIGUES DE SOUSA BOTELHO DE [PT]	UNIV DO PORTO [PT]; MACEDO PEREIRA FILIPE ADAO [PT]; KOEHLER VAN ASCH BARBARA JOANA [PT]; RODRIGUES DE SOUSA BOTELHO DE [PT]
PATRICIO DE OLIVEIRA FERNANDES [PT]; MOREIRA DA COSTA FRANCO MARIA [PT]; DELGADO DOMINGOS ANTUNES MALCA [PT]; PEREIRA GOMES ANA MARIA [PT]	ESCOLA SUPERIOR DE BIOTECNOLOG [PT]; PATRICIO DE OLIVEIRA FERNANDES [PT]; MOREIRA DA COSTA FRANCO MARIA [PT]; DELGADO DOMINGOS ANTUNES MALCA [PT]; PEREIRA GOMES ANA MARIA [PT]
NOBRE LIGIA S [PT]; SEIXAS JOAO D [PT]; ROMAO CARLOS C [PT]; SARAIVA LIGIA M [PT]	ALFAMA INVESTIGACAO E DESENVOL [PT]; NOBRE LIGIA S [PT]; SEIXAS JOAO D [PT]; ROMAO CARLOS C [PT]; SARAIVA LIGIA M [PT]
ALVES RAMALHO GOMES MARIO LUIS [PT]	SGC EN SGPS S A [PT]; ALVES RAMALHO GOMES MARIO LUIS [PT]
JASEN ROBERT [PT]; CAMBORIEUX SEBASTEIN [GB]; KENNY GENEVIEVE [GB]; TANNER RICHARD [GB]; LUPPES LOREN [US]; BAIADA ANTHONY [GB]; KERR JOHN [GB]	TATE & LYLE INGREDIENTS [US]; JASEN ROBERT [PT]; CAMBORIEUX SEBASTEIN [GB]; KENNY GENEVIEVE [GB]; TANNER RICHARD [GB]; LUPPES LOREN [US]; BAIADA ANTHONY [GB]; KERR JOHN [GB]
MAGALHAES MENDES ADELIO MIGUEL [PT]; PALMA MADEIRA LUIS MIGUEL [PT]; DIAS CATARINO MARGARIDA [PT]	UNIV DO PORTO [PT]; MAGALHAES MENDES ADELIO MIGUEL [PT]; PALMA MADEIRA LUIS MIGUEL [PT]; DIAS CATARINO MARGARIDA [PT]
CARVALHO FERNANDES DE MIRANDA REIS MARIA D'ASCENCAO [PT]; FREITAS OLIVEIRA RUI MANUEL [PT]; PEREIRA DA CUNHA RODRIGUES OLIVEIRA CRISTINA PAULA [PT]; ANDRADE DE FREITAS MARIA FILOM [PT]; DELGADO ALVES VICTOR MANUEL [PT]; OLIVEIRA PAIS JOANA [PT]	CARVALHO FERNANDES DE MIRANDA REIS MARIA D'ASCENCAO [PT]; FREITAS OLIVEIRA RUI MANUEL [PT]; PEREIRA DA CUNHA RODRIGUES OLIVEIRA CRISTINA PAULA [PT]; ANDRADE DE FREITAS MARIA FILOM [PT]; DELGADO ALVES VICTOR MANUEL [PT]; OLIVEIRA PAIS JOANA [PT]
ROMMERSKIRCHEN PETER [DE]; DE BASTOS REIS PORTUGAL MARIO [PT]	GERO VERTRIEBS GMBH [DE]; ROMMERSKIRCHEN PETER [DE]; DE BASTOS REIS PORTUGAL MARIO [PT]
LABRINCHA BATISTA JOAO ANTONIO [PT]; PEIXOTO MARQUES RIBEIRO MANUEL [PT]; CORDEIRO DA COSTA MARIA GRACIA [PT]	UNIV AVEIRO [PT]; LABRINCHA BATISTA JOAO ANTONIO [PT]; PEIXOTO MARQUES RIBEIRO MANUEL [PT]; CORDEIRO DA COSTA MARIA GRACIA [PT]
VEIGA JORGE LUIS [PT]	NOKIA SIEMENS NETWORKS OY [FI]; VEIGA JORGE LUIS [PT]
CHAUDHARI ANITA [US]; CHAKRABARTY ANANDA [US]; DAS GUPTA TAPAS [US]; FIALHO ARSENIO [PT]; YAMADA TOHRU [US]; ZHU YONGHUA [US]	TRUSTEES OF THE UNIVERSITY OF [US]; CHAUDHARI ANITA [US]; CHAKRABARTY ANANDA [US]; DAS GUPTA TAPAS [US]; FIALHO ARSENIO [PT]; YAMADA TOHRU [US]; ZHU YONGHUA [US]
ALMEIDA RIBEIRO CLARO JOAO CAR [PT]; RAGAGELES VALENTE ANTONIO JOSE [PT]; DA ROSA PIRES ARTUR [PT]	UNIV TRAS OS MONTES E ALTO DOU [PT]; ALMEIDA RIBEIRO CLARO JOAO CAR [PT]; RAGAGELES VALENTE ANTONIO JOSE [PT]; DA ROSA PIRES ARTUR [PT]
GOMES MELICO MANUEL ALEXANDRE [PT]; GOMES MELICO CARLOS [PT]	ASPILUSA ASPIRACAO CENTRALIZAD [PT]; GOMES MELICO MANUEL ALEXANDRE [PT]; GOMES MELICO CARLOS [PT]
QUINTAS MENDES RUI MANUEL [PT]; LUZ FERREIRA TRINDADE JOAO MAR [PT]	QUINTAS MENDES RUI MANUEL [PT]; LUZ FERREIRA TRINDADE JOAO MAR [PT]
CORDEIRO DA SILVA ANABELA [PT]; PINTO DA COSTA TAVARES JOANA A [PT]; KONG THOO LIN PAUL [GB]	UNIV DO PORTO [PT]; CORDEIRO DA SILVA ANABELA [PT]; PINTO DA COSTA TAVARES JOANA A [PT]; KONG THOO LIN PAUL [GB]
ROCA CHRISTOPHE FRANCOIS AIME [PT]; SOUSA JOSE MANUEL BERNARDO [PT]; CEREJO MARTA ISABEL HEITOR [PT]; DOS SANTOS ALEXANDRA MARIA BAR [PT]; RODRIGUES CATIA SANTANA REVERE [PT]; PINHEIRO RICARDO FILIPE ANTUNE [PT]; SAM JOHANNES [DE]; CALADO PATRICIA RAMALHETE MEND [PT]; CHATTERJEE SUKALYAN [PT]; VIEIRA HELENA MARGARIDA MOREIR [PT]	BIOALVO SERVICOS INVESTIGACAO [PT]; ROCA CHRISTOPHE FRANCOIS AIME [PT]; SOUSA JOSE MANUEL BERNARDO [PT]; CEREJO MARTA ISABEL HEITOR [PT]; DOS SANTOS ALEXANDRA MARIA BAR [PT]; RODRIGUES CATIA SANTANA REVERE [PT]; PINHEIRO RICARDO FILIPE ANTUNE [PT]; SAM JOHANNES [DE]; CALADO PATRICIA RAMALHETE MEND [PT]; CHATTERJEE SUKALYAN [PT]; VIEIRA HELENA MARGARIDA MOREIR [PT]
PEREIRA HELENA MARGARIDA NUNES [PT]; REIS RUI LUIS GONCALVES DOS [PT]; MARTINS SUSANA PINTO ARAUJO DA [PT]; MARQUES ANTONIO JORGE VELEZ [PT]	AMORIM CORK COMPOSITES S A [PT]; AMORIM ISOLAMENTOS S A [PT]; PEREIRA HELENA MARGARIDA NUNES [PT]; REIS RUI LUIS GONCALVES DOS [PT]; MARTINS SUSANA PINTO ARAUJO DA [PT]; MARQUES ANTONIO JORGE VELEZ [PT]
ALMEIDA RIBEIRO CLARO JOAO CAR [PT]; RAGAGELES VALENTE ANTONIO JOSE [PT]; DA ROSA PIRES ARTUR [PT]	UNIV TRAS OS MONTES E ALTO DOU [PT]; ALMEIDA RIBEIRO CLARO JOAO CAR [PT]; RAGAGELES VALENTE ANTONIO JOSE [PT]; DA ROSA PIRES ARTUR [PT]
LUCAS MACEDO PAULO ALEXANDRE [PT]	LUCAS MACEDO PAULO ALEXANDRE [PT]
HENRIQUES ADRIANO O [PT]; SCHYNS GHISLAIN [CH]	DSM IP ASSETS BV [NL]; HENRIQUES ADRIANO O [PT]; SCHYNS GHISLAIN [CH]
BRUTO DA COSTA FERNANDO ANTONI [PT]	BRUTO DA COSTA FERNANDO ANTONI [PT]
ALBUQUERQUE JOSE MANUEL BRAGA [PT]	ALBUQUERQUE JOSE MANUEL BRAGA [PT]
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Table 6.3 (continued) WIPO published patent applications by Portuguese applicants (2008)

Title	Publication Number	Publication Date
PROCESS FOR THE AUTOMATIC CALCULUS OF THE CONVEX OR CONCAVE HULL OF AN ARBITRARY SET OF POINTS	WO2008107859 (A1)	12-09-08
STARCH-BASED COMPOSITIONS AND RELATED USE AND OBTAINMENT PROCESS.	WO2008090195 (A2)	31-07-08
CHROMONE DERIVATIVES FOR USE AS ANTIOXIDANTS/PRESERVATIVES	WO2008104925 (A1)	04-09-08
MOTORIZED SCOOTER TYPE VEHICLE WITH FOLDABLE SEAT SYSTEM	WO2008062306 (A1)	29-05-08
METHOD FOR THE FUNCTIONAL IDENTIFICATION OF NEW NEURONS, NEURAL PROGENITORS, ASTROCYTES AND IMMATURE CELLS FROM STEM CELL CULTURES AND USES THEREOF	WO2008100168 (A1)	21-08-08
METHOD OF FORMING AN OXIDE THIN FILM	WO2008098963 (A2)	21-08-08
SELF-RUNNING FLUID MOTOR FOR THE PRODUCTION OF A ROTATION MOVEMENT	WO2008072989 (A2)	19-06-08
DETECTION AND QUANTIFICATION SYSTEM OF BIOLOGICAL MATTER CONSTITUTED BY ONE OR MORE OPTICAL SENSORS AND ONE OR MORE LIGHT SOURCES, ASSOCIATED PROCESS AND RELATED APPLICATIONS	WO2008029374 (A2)	13-03-08
ELECTRONIC SEMICONDUCTOR DEVICE BASED ON COPPER NICKEL AND GALLIUM-TIN-ZINC-COPPER-TITANIUM p AND n-TYPE OXIDES, THEIR APPLICATIONS AND CORRESPONDING MANUFACTURE PROCESS	WO2008097117 (A1)	14-08-08
DEVICE TO MONITOR AND REGISTER THE TRANSPORT AND STORAGE TEMPERATURE OF TEMPERATURE-SENSITIVE PRODUCTS AND METHOD THEREOF	WO2008093282 (A2)	07-08-08
SEPARATION COLUMN AND PRESSURE SWING ADSORPTION PROCESS FOR GAS PURIFICATION	WO2008072215 (A2)	19-06-08
METHOD FOR PRODUCING AN INSULATING ELEMENT FOR WALL OR COATING AND ELEMENT OBTAINED THEREBY	WO2008062289 (A2)	29-05-08
SEED TREATMENT WITH PRF	WO2008094042 (A1)	07-08-08
TRICARBONYL COMPLEXES WITH TRIDENTATE CHELATORS FOR MYOCARDIUM IMAGING	WO2008061792 (A2)	29-05-08
AUTOMATION SYSTEM COMPRISING AN IMPLEMENTED ENGINEERING-ENVIRONMENT	WO2008090216 (A1)	31-07-08
SPOREFORMERS AND SCREENING FOR SPOREFORMERS	WO2008089970 (A1)	31-07-08
BODY KINETICS MONITORING SYSTEM	WO2008018810 (A2)	14-02-08
CHEMICAL COMPOSITION AND PROCESS FOR TREATING GEOTECHNICAL SLURRIES	WO2008090194 (A1)	31-07-08
METHODS FOR TREATING INFLAMMATORY DISEASE BY ADMINISTERING ALDEHYDES AND DERIVATIVES THEREOF	WO2008069688 (A2)	12-06-08
METHOD FOR THE CONVERSION, UNDER MILD CONDITIONS AND IN AQUEOUS MEDIUM, OF GASEOUS AND LIQUID ALKANES INTO CARBOXYLIC ACIDS	WO2008088234 (A1)	24-07-08
IMPROVED SUCRALOSE PRODUCTION METHOD	WO2008087425 (A1)	24-07-08
COATING OR FLOORING ELEMENT AND METHOD FOR CARRYING OUT SAID ELEMENT	WO2008084375 (A2)	17-07-08
CUSTOMIZED CREDENTIAL AND METHOD AND SYSTEM OF PRODUCTION	WO2008082556 (A1)	10-07-08
BICYCLE RIM WITH WEAR INDICATOR	WO2008082320 (A1)	10-07-08
BICYCLE WHEEL WITH RIM FOR A TUBELESS TYRE	WO2008082319 (A1)	10-07-08
PROCESS FOR DETECTING HELICOBACTER PYLORI USING ALIPHATIC AMIDES	WO2008081398 (A1)	10-07-08
SHADE CARD	WO2008078067 (A1)	03-07-08
COMPOSITE ROD REINFORCED BY A BRAIDED STRUCTURE WITH AXIAL REINFORCEMENT AND PRODUCTION TECHNIQUE THEREOF	WO2008041204 (A2)	10-04-08
PROCESS OF SYNTHESIS ASYMMETRIC POLYURETHANE BASED MEMBRANES WITH HEMOCOMPATIBILITY CHARACTERISTICS AND MEMBRANES OBTAINED BY SAID PROCESS	WO2008041126 (A2)	10-04-08

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MARTINS BORGES MARIA FERNANDA [PT]; NEVES GASPAS ALEXANDRA MARIA [PT]; PINTO DE JESUS GARRIDO JORGE M [PT]; DA SILVA PEREIRA MILHAZES NUNO [PT]; CANTEIRO BATOREU MARIA CAMILA [PT]	UNIV DO PORTO [PT]; MARTINS BORGES MARIA FERNANDA [PT]; NEVES GASPAS ALEXANDRA MARIA [PT]; PINTO DE JESUS GARRIDO JORGE M [PT]; DA SILVA PEREIRA MILHAZES NUNO [PT]; CANTEIRO BATOREU MARIA CAMILA [PT]
VEIGAS PEDRO JOAO ZACARIAS [PT]	ZACELECTRICA FABRICO DE VEICUL [PT]; VIEGAS PEDRO JOAO ZACARIAS [PT]
AGASSE FABIENNE [PT]; BERNARDINO LILIANA INACIO [PT]; SILVA BRUNO ALEXANDRE CORDEIRO [PT]; MALVA JOAO JOSE OLIVEIRA [PT]	UNIV COIMBRA [PT]; CT DE NEUROCIENCIAS E BIOLOG C [PT]; AGASSE FABIENNE [PT]; BERNARDINO LILIANA INACIO [PT]; SILVA BRUNO ALEXANDRE CORDEIRO [PT]; MALVA JOAO JOSE OLIVEIRA [PT]
PINNA NICOLA ALESSANDRO [PT]; RAUWEL ERWAN [PT]	UNIV AVEIRO [PT]; PINNA NICOLA ALESSANDRO [PT]; RAUWEL ERWAN [PT]
LEITAO JORGE MANUEL [PT]	LEITAO JORGE MANUEL [PT]
FERRAO DE PAIVA MARTINS RODRIG [PT]; RIBEIRO VIANA BAPTISTA PEDRO M [PT]; CORREIA FORTUNATO ELVIRA MARIA [PT]	UNIV NOVA DE LISBOA [PT]; FERRAO DE PAIVA MARTINS RODRIG [PT]; RIBEIRO VIANA BAPTISTA PEDRO M [PT]; CORREIA FORTUNATO ELVIRA MARIA [PT]
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CANTI MAX [IT]	LABICER LAB IND CERAMICO S A [PT]; CANTI MAX [IT]
SLUIJTER MENNO EMANUEL [CH]; TEIXEIRA ALEXANDRE JOSE LEONAR [PT]	UTOPS B V [NL]; SLUIJTER MENNO EMANUEL [CH]; TEIXEIRA ALEXANDRE JOSE LEONAR [PT]
SANTOS ISABEL DA GRACA REGO DO [PT]; PAULO ANTONIO MANUEL ROCHA [PT]	MALLINCKRODT INC [US]; SANTOS ISABEL DA GRACA REGO DO [PT]; PAULO ANTONIO MANUEL ROCHA [PT]
COLOMBO ARMANDO WALTER [DE]; BEPPERLING AXEL [DE]; CACHAPA DANIEL [PT]; MILAGAIA RUI [PT]	SCHNEIDER ELECTRIC GMBH [DE]; COLOMBO ARMANDO WALTER [DE]; BEPPERLING AXEL [DE]; CACHAPA DANIEL [PT]; MILAGAIA RUI [PT]
SCHYNS GHISLAIN [CH]; HENRIQUES ADRIANO O [PT]	DSM IP ASSETS BV [NL]; SCHYNS GHISLAIN [CH]; HENRIQUES ADRIANO O [PT]
AUGUSTO AFONSO JOSE [PT]; GOMES CORREIA JOSE HIGINO [PT]; PEIXOTO DA SILVA HELDER RAUL [PT]; MACHADO DA ROCHA LUIS ALEXANDR [PT]	UNIV DO MINHO [PT]; AUGUSTO AFONSO JOSE [PT]; GOMES CORREIA JOSE HIGINO [PT]; PEIXOTO DA SILVA HELDER RAUL [PT]; MACHADO DA ROCHA LUIS ALEXANDR [PT]
BOSTYN ARNAUD R W [BE]; CAPITAO-MOR DA COSTA E SILVA J [PT]	GEO GROUND ENGINEERING OPERATI [PT]; BOSTYN ARNAUD R W [BE]; CAPITAO-MOR DA COSTA E SILVA J [PT]
ROMAO CARLOS C [PT]; MATOS MARTA NORTON DE [PT]	ALFAMA INVESTIGACAO E DESENVOL [PT]; ROMAO CARLOS C [PT]; MATOS MARTA NORTON DE [PT]
POMBEIRO ARMANDO [PT]; KIRILLOVA MARINA [PT]; KIRILLOV ALEXANDER [PT]; SILVA JOSE ARMANDO [PT]; FRAUSTO DA SILVA JOAO [PT]	INST SUPERIOR TECNICO [PT]; POMBEIRO ARMANDO [PT]; KIRILLOVA MARINA [PT]; KIRILLOV ALEXANDER [PT]; SILVA JOSE ARMANDO [PT]; FRAUSTO DA SILVA JOAO [PT]
LEINHOS DUANE [US]; KERR JOHN [GB]; JANSEN BOB [PT]; CAMBORIEUX SEBASTIEN [GB]; BAIADA ANTHONY [GB]; LLOYD-JONES PETER [GB]	TATE & LYLE TECHNOLOGY LTD [GB]; LEINHOS DUANE [US]; KERR JOHN [GB]; JANSEN BOB [PT]; CAMBORIEUX SEBASTIEN [GB]; BAIADA ANTHONY [GB]; LLOYD-JONES PETER [GB]
CANTI MAX [IT]	LABICER LAB IND CERAMICO S A [PT]; CANTI MAX [IT]
PHELAN JEFFREY [US]; ADAMS CHARLES [US]; ENAV DORON [PT]; GLOVER JOHN [US]	I6 LLC [US]; PHELAN JEFFREY [US]; ADAMS CHARLES [US]; ENAV DORON [PT]; GLOVER JOHN [US]
LEVI SILVA ARMANDO [PT]	RODI METALURGICAS DO EIXO S A [PT]; LEVI SILVA ARMANDO [PT]
AFONSO FELGAR CLAUDIA PATRICIA [PT]; DO COUTO GANDARINHO ALEXANDRE [PT]	RODI METALURGICAS DO EIXO SA [PT]; AFONSO FELGAR CLAUDIA PATRICIA [PT]; DO COUTO GANDARINHO ALEXANDRE [PT]
COIMBRA RODRIGUES DA SILVA MAN [PT]; DA ROCHA SIMOES CARRICO SILVIA [PT]; CARVALHEIRO DIAS ELSA MARIA [PT]; RIBEIRO DE CASTRO FERREIRA JOS [PT]	UNIV AVEIRO [PT]; COIMBRA RODRIGUES DA SILVA MAN [PT]; DA ROCHA SIMOES CARRICO SILVIA [PT]; CARVALHEIRO DIAS ELSA MARIA [PT]; RIBEIRO DE CASTRO FERREIRA JOS [PT]
MESQUITA DE SILVA ANTONIO CAND [PT]	COATS LTD J & P [GB]; MESQUITA DE SILVA ANTONIO CAND [PT]
ESTEVES DE SOUSA FANGUEIRO RAU [PT]; GONILHO PEREIRA CRISTIANA NADI [PT]; DUARTE ARAUJO MARIO [PT]; JALALI SAID [PT]	UNIV DO MINHO [PT]; ESTEVES DE SOUSA FANGUEIRO RAU [PT]; GONILHO PEREIRA CRISTIANA NADI [PT]; DUARTE ARAUJO MARIO [PT]; JALALI SAID [PT]
CORREIA DE PINHO MARIA NORBERT [PT]	INST SUPERIOR TECNICO [PT]; CORREIA DE PINHO MARIA NORBERT [PT]

Table 6.3 (continued) WIPO published patent applications by Portuguese applicants (2008)

Title	Publication Number	Publication Date
METHOD FOR THE DETERMINATION OF PHOSPHOLIPIDS IN AMNIOTIC FLUID SAMPLES	WO2008015634 (A2)	07-02-08
DYNAMIC DETECTION DEVICE BASED ON SURFACE PLASMON RESONANCE EFFECT	WO2008060172 (A1)	22-05-08
SMART DEVICE FOR ABSORBING SOLAR ENERGY AND CONTROLING SUNLIGHT ADMISSION	WO2008075286 (A2)	26-06-08
AIR TREATMENT UNIT, OF DEHUMIDIFICATION AND HEATING ENERGETICALLY EFFICIENT	WO2008038250 (A2)	03-04-08
SHOE	WO2008071443 (A1)	19-06-08
MATERIALS, SYSTEMS AND METHODS INVOLVING PLASTICS MATERIAL	WO2008070916 (A1)	19-06-08
DETECTION DEVICE BASED ON SURFACE PLASMON RESONANCE EFFECT	WO2008057000 (A1)	15-05-08
AGGLOMERATES OF MICROCAPSULES OF PHASE CHANGE MATERIALS (PCM), PROCESSES FOR THEIR FORMATION AND APPLICATION IN FIBROUS OR POROUS POLYMERIC MATERIALS	WO2008041191 (A2)	10-04-08
PULSED RADIOFREQUENCY FOR INTRA-ARTICULAR THERAPY OF PAIN	WO2008069647 (A1)	12-06-08
FABRIC BELT FOR A MACHINE FOR PRODUCING WEB MATERIAL, IN PARTICULAR PAPER OR PAPERBOARD	WO2008068074 (A1)	12-06-08
SIGNALLING FOR PUSH-TO-TRANSLATE-SPEECH (PTTS) SERVICE	WO2008064998 (A1)	05-06-08
MEDICAL PUMP	WO2008058704 (A1)	22-05-08
PROCESS FOR THE PREPARATION OF BIPHOSPHONIC ACIDS AND SALTS THEREOF	WO2008056129 (A1)	15-05-08
SYSTEM AND PROCESS OF VECTOR PROPULSION WITH INDEPENDENT CONTROL OF THREE TRANSLATION AND THREE ROTATION AXIS	WO2008054234 (A1)	08-05-08
LIQUID BIOFUELS CONTAINING DIHYDROXYFURAN, PROPANOL AND ITS PRODUCTION PROCESS FROM POLYOLS ORIGINATED IN AGRICULTURE	WO2008053284 (A1)	08-05-08
DEVICE FOR PRESENTING A SIGN, PARTICULARLY A COMMERCIAL LEAFLET, ON THE SHELF OF A SALES AREA	WO2008052721 (A1)	08-05-08
MONITORING METHOD AND APPARATUS OF PROCESSING OF A DATA STREAM WITH HIGH RATE/FLOW	WO2008052583 (A1)	08-05-08
METHOD FOR FORWARDING ADDRESS PREFIX DATA IN A NETWORK AND DEVICE	WO2008055908 (A1)	15-05-08
COLLYRIUM FOR DRY EYE	WO2008036258 (A2)	27-03-08
ORAL SUBMICRON PARTICLE DELIVERY SYSTEM FOR PROTEINS AND PROCESS FOR ITS PRODUCTION	WO2008051101 (A1)	02-05-08
METHOD FOR SIMULTANEOUS CONCENTRATION AND RECTIFICATION OF GRAPE MUST USING NANOFILTRATION AND ELECTRODIALYSIS	WO2008051100 (A2)	02-05-08
METHOD AND SYSTEM FOR TRANSMITTING INFORMATION FROM AT LEAST ONE PERIPHERAL COMMUNICATION UNIT TO A CENTRAL COMMUNICATION UNIT	WO2008052903 (A1)	08-05-08
CONVERTER MECHANISM OF THE MOVEMENT OF TILTING STEPS (PUSH-PULL) INTO A UNIDIRECTIONAL ROTATING MOVEMENT OF AN OUTPUT AXIS	WO2008024008 (A2)	28-02-08
STOPPERS OF COMPOSITE CORK MATERIAL FOR SPARKLING WINES AND THE PROCESS FOR THEIR PRODUCTION	WO2008048129 (A1)	24-04-08
USE AS A FERTILIZER OF A PLANT EXTRACT OBTAINED FROM GOLF COURSE AND LAWN MAINTENANCE	WO2008044955 (A1)	17-04-08
METHOD FOR OBTAINING AND LAYING A COATING ELEMENT, PLANT FOR MAKING THE COATING ELEMENT AND COATING ELEMENT SO OBTAINED	WO2008017931 (A2)	14-02-08
OIL ABSORBING FOAM	WO2008043545 (A1)	17-04-08
PROCESS FOR THE PRODUCTION OF SPREADY WHEY CHEESE AND CREAMY WHEY CHEESE	WO2008026956 (A2)	06-03-08
HYBRID PRESSURE VESSEL WITH SEPARABLE JACKET	WO2008042321 (A1)	10-04-08

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GARCIA DA FONSECA JOAO [PT]	BIOSURFIT S A [PT]; GARCIA DA FONSECA JOAO [PT]
TINOCO CAVALHEIRO JOSE ROBERTO [PT]; SOUSA TAVARES DA FONSECA MARIO [PT]	UNIV DO PORTO [PT]; TINOCO CAVALHEIRO JOSE ROBERTO [PT]; SOUSA TAVARES DA FONSECA MARIO [PT]
MAGALHAES PIRES PAULO JORGE [PT]	UNIV DO PORTO [PT]; MAGALHAES PIRES PAULO JORGE [PT]
GSCHWENDER HERBERT [PT]	BODYFEEL PRODUTOS DE SAUDE LTD [PT]; GSCHWENDER HERBERT [PT]
MORRISS STEPHEN MICHAEL [AU]	CLOSE THE LOOP TECHNOLOGIES PT [AU]; MORRISS STEPHEN MICHAEL [AU]
GARCIA DA FONSECA JOAO [PT]	BIOSURFIT S A [PT]; GARCIA DA FONSECA JOAO [PT]
NAYLOR ROCHA GOMES JAIME ISIDO [PT]; MAGALHAES VAZ VIEIRA RAQUEL MA [PT]; DA SILVA RIBEIRO ANDRE FILIPE [PT]; PINTO CERQUEIRA BARROS SANDRA [PT]	UNIV DO MINHO [PT]; NAYLOR ROCHA GOMES JAIME ISIDO [PT]; MAGALHAES VAZ VIEIRA RAQUEL MA [PT]; DA SILVA RIBEIRO ANDRE FILIPE [PT]; PINTO CERQUEIRA BARROS SANDRA [PT]
SLUIJTER MENNO EMANUEL [CH]; TEIXEIRA ALEXANDRE JOSE LEONAR [PT]	COTOP INTERNAT B V [NL]; SLUIJTER MENNO EMANUEL [CH]; TEIXEIRA ALEXANDRE JOSE LEONAR [PT]
PEREIRA ANTONIO [PT]; KARLSSON JOERGEN [SE]; JANSSON ANN-SOFIE [SE]	VOITH PATENT GMBH [DE]; PEREIRA ANTONIO [PT]; KARLSSON JOERGEN [SE]; JANSSON ANN-SOFIE [SE]
MORITZ PETER [DE]; DELGADO JOSE [PT]; PEREIRA PAULO JORGE [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; MORITZ PETER [DE]; DELGADO JOSE [PT]; PEREIRA PAULO JORGE [PT]
KUEHNER RALF [DE]; MITZLAFF LOTHAR [PT]; WAHL HANS-JUERGEN [DE]; BAUER STEFFEN [DE]	ERBE ELEKTROMEDIZIN [DE]; KUEHNER RALF [DE]; MITZLAFF LOTHAR [PT]; WAHL HANS-JUERGEN [DE]; BAUER STEFFEN [DE]
BAPTISTA JOANA [PT]; MENDES ZITA [PT]	HOVIONE INT LTD [CH]; TURNER CRAIG ROBERT [GB]; BAPTISTA JOANA [PT]; MENDES ZITA [PT]
RAPOSO SEVERINO MANUEL OLIVEIR [PT]	RAPOSO SEVERINO MANUEL OLIVEIR [PT]
CORREIA PEDRO [PT]	CORREIA PEDRO [PT]
ALVES MANUEL [PT]; DINIS PEDRO [PT]; CASEIRO ROSA [PT]	JOALPE IND DE EXPOSITORES S A [PT]; ALVES MANUEL [PT]; DINIS PEDRO [PT]; CASEIRO ROSA [PT]
FREIRE MARIO [PT]; GARCIA NUNO [PT]; HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]; INACIO PEDRO [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; FREIRE MARIO [PT]; GARCIA NUNO [PT]; HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]; INACIO PEDRO [PT]
CAMILO TIAGO [PT]; ESTEVES CARVALHO SOFIA RUTE [DE]; PASQUALINI SANDRINE [DE]; WEVERING STEFAN [DE]; DE FRIAS REBELO NUNES PEDRO RI [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; CAMILO TIAGO [PT]; ESTEVES CARVALHO SOFIA RUTE [DE]; PASQUALINI SANDRINE [DE]; WEVERING STEFAN [DE]; DE FRIAS REBELO NUNES PEDRO RI [PT]
HOLLY FRANK J [US]; ECHOLS JOEL S [US]	AQUEOUS PHARMA LTD [PT]; HOLLY FRANK J [US]; ECHOLS JOEL S [US]
BECO PINTO REIS ANA CATARINA [PT]; BAPTISTA VEIGA FRANCISCO JOSE [PT]; RIBEIRO ANTONIO JOSE [PT]; NEUFELD RONALD JAMES [CA]; DAMGE CHRISTIANE [FR]	UNIV COIMBRA [PT]
NEVES CORREIA DE PINTO MARIA N [PT]; GERALDES FERNANDES VICTOR MANU [PT]; MARTINS LOPES CATARINO GOMES I [PT]	INST SUPERIOR TECNICO [PT]; NEVES CORREIA DE PINTO MARIA N [PT]; GERALDES FERNANDES VICTOR MANU [PT]; MARTINS LOPES CATARINO GOMES I [PT]
HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]
DE MATOS TEODOSIO JOSE [PT]	MONZO GOMEZ PEREGRIN [ES]; DE MATOS TEODOSIO JOSE [PT]
MOURA BORDADO JOAO CARLOS [PT]; NOTO JAIME [PT]; DE MAGALHAES MOREIRA BASTOS AN [PT]	PIETEC CORTICAS LDA [PT]; ISTITUTO SUPERIOR TECNICO GALT [PT]; MOURA BORDADO JOAO CARLOS [PT]; NOTO JAIME [PT]; DE MAGALHAES MOREIRA BASTOS AN [PT]
DE OLIVEIRA PESTANA CORREIA MA [PT]; ALAMBRE SACRAMENTO DOMINGOS IR [PT]; REALINHO GONCALVES CORREIA PED [PT]	UNIV DO ALGARVE [PT]; CUF ADUBOS DE PORTUGAL S A [PT]; DE OLIVEIRA PESTANA CORREIA MA [PT]; ALAMBRE SACRAMENTO DOMINGOS IR [PT]; REALINHO GONCALVES CORREIA PED [PT]
CANTI MAX [IT]	LABICER LAB IND CERAMICO S A [PT]; CANTI MAX [IT]
CLARKE JAMES W [NL]; BORDADO JOAO CARLOS MOURA [PT]; CORREIA CRISTINA SOFIA REBELO [PT]; CORREIA NUNO DAVIDE SOBRAL [PT]	ARIZONA CHEM [US]; CLARKE JAMES W [NL]; BORDADO JOAO CARLOS MOURA [PT]; CORREIA CRISTINA SOFIA REBELO [PT]; CORREIA NUNO DAVIDE SOBRAL [PT]
SANCHEZ MARISA ALEXANDRA PEIXO [PT]; DA SILVA SARA MARGARIDA BERNAR [PT]	QUEIJO SALOIO IND DE LACTICINI [PT]; SANCHEZ MARISA ALEXANDRA PEIXO [PT]; DA SILVA SARA MARGARIDA BERNAR [PT]
OLIVEIRA TIAGO [PT]; ANTUNES GUIMARAES JOAO CARLOS [PT]; ALVES EDUARDO J [PT]	AMTROL INC [US]; OLIVEIRA TIAGO [PT]; ANTUNES GUIMARAES JOAO CARLOS [PT]; ALVES EDUARDO J [PT]

Table 6.3 (continued) WIPO published patent applications by Portuguese applicants (2008)

Title	Publication Number	Publication Date
SPORE SURFACE DISPLAYS OF BIOACTIVE MOLECULES	WO2008017483 (A2)	14-02-08
METHOD FOR PROTECTION SWITCHING IN RING TOPOLOGIES	WO2008037781 (A1)	03-04-08
A METHOD, COMMUNICATION SYSTEM AND CENTRAL COMMUNICATION UNIT FOR DETECTING A FAULTY PERIPHERAL COMMUNICATION UNIT	WO2008037653 (A1)	03-04-08
FLOW SENSOR BASED ON A PIEZOELECTRIC POLYMER	WO2008035297 (A2)	27-03-08
POLYMERIC CONCRETE FOR WIND GENERATORS TOWERS OR OTHER LARGE STRUCTURAL APPLICATIONS	WO2008032281 (A1)	20-03-08
MANAGING QoS IN AN UNIFIED WAY	WO2008031467 (A1)	20-03-08
DEVICE FOR DISPLAYING SIGNAGE, SUCH AS IN PARTICULAR ADVERTISING SHEET OR THE LIKE, ON SHELVING IN A SALES AREA	WO2008028562 (A1)	13-03-08
NANO/MACROPOROUS BONE TISSUE SCAFFOLDS FOR REGENERATIVE MEDICINE	WO2008028036 (A1)	06-03-08
CONNECTING ELEMENT, MOUNTING ELEMENT AND MOUNTING SYSTEM FOR THE CONNECTION OF BOWDEN CABLES	WO2008025567 (A1)	06-03-08
PRESS WITH A PRESSING ROLL AND PROCESS THEREOF	WO2008020777 (A1)	21-02-08
COLLAPSIBLE PACKAGE	WO2008020776 (A1)	21-02-08
MECHANISM FOR ADJUSTING THE LENGTH OF A BOWDEN CABLE	WO2008015022 (A1)	07-02-08
DEVICE FOR THE RELEASE OF ODORANTS AND/OR ACTIVE SUBSTANCES, IN PARTICULAR AIR FRESHENER FOR A MOTOR VEHICLE	WO2008014812 (A1)	07-02-08
PROCESS FOR THE ADDITIVATION OF WINE	WO2008013465 (A1)	31-01-08
COATING COMPOSITION COMPRISING STARCH	WO2008012573 (A1)	31-01-08
METHOD OF SEPARATING PROPYLENE IN MIXTURE WITH PROPANE BY ADSORPTION IN SIMULATED MOVING BED	WO2008012410 (A1)	31-01-08
BIOCATALYTIC HYDROPHILIZATION OF POLYOLEFINES	WO2008012236 (A1)	31-01-08
ELECTRICALLY OPERABLE WALL HEATING PLATE FOR USAGE IN A WALL STRUCTURE OF THE INTERIOR OF A BUILDING	WO2008012092 (A1)	31-01-08
PHOTOBIOREACTOR FOR PHOTOSYNTHETIC MICROORGANISM CULTURE	WO2008010737 (A1)	24-01-08
PRODUCTION METHOD FOR CALCIUM PHOSPHATE NANO- PARTICLES WITH HIGH PURITY AND THEIR USE	WO2008007992 (A2)	17-01-08
A METHOD FOR THE PRODUCTION OF FENTANYL - BASED ANESTHETICS FOR THEIR ORAL TRANSMUCOSAL ADMINISTRATION IN A CANDY - LIKE DOSAGE FORM	WO2008007991 (A1)	17-01-08
ENABLING SUBSCRIBERS TO VIDEO MULTICAST	WO2008006440 (A1)	17-01-08
METHOD FOR PRODUCING NANOPOROUS MOLDED PARTS	WO2008003623 (A1)	10-01-08
MONITORING AN MSTP NETWORK	WO2008003428 (A1)	10-01-08
DIAGNOSIS OF FASCIOLISIS BY SKIN TEST (INTRADERMOREACTION) USING THE ANTIGEN FH8 (FASCIOLIN).	WO2008002166 (A2)	03-01-08

Inventor/s	Applicant/s
HENRIQUES ADRIANO [PT]; SCHYNS GHISLAIN [CH]; WENZEL THIBAUT JOSE [NL]; POTOT SEBASTIAN [FR]	DSM IP ASSETS BV [NL]; HENRIQUES ADRIANO [PT]; SCHYNS GHISLAIN [CH]; WENZEL THIBAUT JOSE [NL]; POTOT SEBASTIAN [FR]
DE FRIAS REBELO NUNES PEDRO RI [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; DE FRIAS REBELO NUNES PEDRO RI [PT]
FONSECA DANIEL [PT]; HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; FONSECA DANIEL [PT]; HAJDUCZENIA MAREK [PT]; MONTEIRO PAULO [PT]; SILVA HENRIQUE [PT]
HENRIQUES MINAS GRACA MARIA [PT]; LANCEROS MENDEZ SENENTXU [PT]; GOMES DA SILVA SENCADAS VITOR [PT]; VIEIRA DA ROCHA JOSE GERARDO [PT]	UNIV DO MINHO [PT]; HENRIQUES MINAS GRACA MARIA [PT]; LANCEROS MENDEZ SENENTXU [PT]; GOMES DA SILVA SENCADAS VITOR [PT]; VIEIRA DA ROCHA JOSE GERARDO [PT]
MALHEIRO DE ARAGAO ALEXANDRE F [PT]; GONCALVES TERRA ANA MARGARIDA [PT]; FERREIRA VIEIRA ANDRE [PT]; MOREIRA PARENTE NOVO CELIA MAR [PT]; FERREIRA SOBRAL PAULO MANUEL [PT]; DA FONSECA FARIAS RODRIGUES DA [PT]; CARDOSO OSSWALD PAULO LUIS [PT]	MALHEIRO DE ARAGAO ALEXANDRE F [PT]; GONCALVES TERRA ANA MARGARIDA [PT]; FERREIRA VIEIRA ANDRE [PT]; MOREIRA PARENTE NOVO CELIA MAR [PT]; FERREIRA SOBRAL PAULO MANUEL [PT]; DA FONSECA FARIAS RODRIGUES DA [PT]; CARDOSO OSSWALD PAULO LUIS [PT]
RIBEIRO ALEXANDRE [PT]; FRANTZ MICHAEL [DE]	NOKIA SIEMENS NETWORKS GMBH [DE]; RIBEIRO ALEXANDRE [PT]; FRANTZ MICHAEL [DE]
ALVES MANUEL [PT]; DINIS PEDRO [PT]; CASEIRO ROSA [PT]	JOALPE IND DE EXPOSITORES S A [PT]; ALVES MANUEL [PT]; DINIS PEDRO [PT]; CASEIRO ROSA [PT]
JAIN HIMANSHU [US]; MARQUES ANA C [PT]; ALMEIDA RUI M [PT]	UNIV LEHIGH [US]; JAIN HIMANSHU [US]; MARQUES ANA C [PT]; ALMEIDA RUI M [PT]
DA SILAVA LOPES PEDRO JOAO [PT]	FICO CABLES LDA [PT]; DA SILAVA LOPES PEDRO JOAO [PT]
SILVA CORREIRA DE SA MANUEL [PT]	ROQUE MAQUINAS E TECNOLOGIA LA [PT]; SILVA CORREIRA DE SA MANUEL [PT]
VARGAS LUIS [PT]; ESPADA ANA [PT]; ROSADO LEONARDO [PT]	VARGAS LUIS [PT]; ESPADA ANA [PT]; ROSADO LEONARDO [PT]
PEREIRA MONTEIRO JOSE [PT]	FICO CABLES LDA [PT]; PEREIRA MONTEIRO JOSE [PT]
VIEIRA PEDRO [PT]	C T R CONSULTORIA TECNICA E RE [PT]; VIEIRA PEDRO [PT]
DA COSTA CABRAL E GIL LUIS MAN [PT]; RODRIGUES PEREIRA CARLOS [PT]	INST NAC DE ENGENHARIA TECNOLO [PT]; DA COSTA CABRAL E GIL LUIS MAN [PT]; RODRIGUES PEREIRA CARLOS [PT]
PODCZECK GISELA FRIDRUN [GB]; FREIRE ANA CRISTINA TEIXEIRA D [PT]	UNIV SUNDERLAND [GB]; PODCZECK GISELA FRIDRUN [GB]; FREIRE ANA CRISTINA TEIXEIRA D [PT]
RODRIGUES ALIRIO [PT]; GRANDE CARLOS [PT]; LAMIA NABIL [PT]; WOLFF LUC [FR]; LEFLAIVE PHILIBERT [FR]; LEINEKUGEL-LE-COCQ DAMIEN [FR]	IFP [FR]; RODRIGUES ALIRIO [PT]; GRANDE CARLOS [PT]; LAMIA NABIL [PT]; WOLFF LUC [FR]; LEFLAIVE PHILIBERT [FR]; LEINEKUGEL-LE-COCQ DAMIEN [FR]
ALMANSA EVA [AT]; CAVACO-PAULO ARTUR [PT]; CHROBACZEK HARALD [DE]; EBERL ANITA [AT]; GLIEDER ANTON [AT]; GUEBITZ GEORG [AT]; HASMANN ANDREA [AT]; HEUMANN SONJA [AT]; NIEDERSTADT RULE [DE]; SCHOENING KAI-UWE [CH]	CIBA SC HOLDING AG [CH]; ALMANSA EVA [AT]; CAVACO-PAULO ARTUR [PT]; CHROBACZEK HARALD [DE]; EBERL ANITA [AT]; GLIEDER ANTON [AT]; GUEBITZ GEORG [AT]; HASMANN ANDREA [AT]; HEUMANN SONJA [AT]; NIEDERSTADT RULE [DE]; SCHOENING KAI-UWE [CH]
CARDOSO PAULO [PT]; HERFURTH DOMINIK [DE]; HUENTING HARALD [DE]	MOLETERM HOLDING AG [CH]; KNAUF GIPS KG [DE]; CARDOSO PAULO [PT]; HERFURTH DOMINIK [DE]; HUENTING HARALD [DE]
CORDOSO MARQUES FERREIRA ANTON [PT]	TECNIA PROCESSOS E EQUIPAMENTO [PT]; CORDOSO MARQUES FERREIRA ANTON [PT]
BRITO LOPES JOSE CARLOS [PT]; GOMES DE QUEIROZ DIAS MADALENA [PT]; TENEDORIO MATOS DA SILVA VIVIA [PT]; QUADROS DE OLIVEIRA E SANTOS P [PT]; MENDES MONTEIRO FERNANDO JORGE [PT]; DA CUNHA GOMES PAULO JORGE [PT]; PATAQUIVA MATEUS ALIS YOVANA [PT]	FLUIDINOVA ENGENHARIA DE FLUID [PT]; INST NAC DE ENGENHARIA BIOMEDI [PT]; BRITO LOPES JOSE CARLOS [PT]; GOMES DE QUEIROZ DIAS MADALENA [PT]; TENEDORIO MATOS DA SILVA VIVIA [PT]; QUADROS DE OLIVEIRA E SANTOS P [PT]; MENDES MONTEIRO FERNANDO JORGE [PT]; DA CUNHA GOMES PAULO JORGE [PT]; PATAQUIVA MATEUS ALIS YOVANA [PT]
QUIROGA KAREN ELIZABETH [PT]	QUIROGA KAREN ELIZABETH [PT]
ARSENIO ARTUR [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; ARSENIO ARTUR [PT]
GUERIN MOREIRA ANDRE [DE]; BOTHE MARC [DE]; SCHAEGLER VOLKER [DE]; ALLMENDINGER MARKUS [DE]; SAMPAIO LOPES PEDRO MANUEL [PT]; SOWART BERND [DE]; FRANCIS TIMOTHY [DE]; WASSNER ERIK [DE]; SCHADE CHRISTIAN [DE]; LONGO DANIELA [DE]; LIETZ SILJANA [DE]; ALTSTAEDT VOLKER [DE]; SANDLER JAN [DE]	BASF AG [DE]; GUERIN MOREIRA ANDRE [DE]; BOTHE MARC [DE]; SCHAEGLER VOLKER [DE]; ALLMENDINGER MARKUS [DE]; SAMPAIO LOPES PEDRO MANUEL [PT]; SOWART BERND [DE]; FRANCIS TIMOTHY [DE]; WASSNER ERIK [DE]; SCHADE CHRISTIAN [DE]; LONGO DANIELA [DE]; LIETZ SILJANA [DE]; ALTSTAEDT VOLKER [DE]; SANDLER JAN [DE]
REDOL JOAO [PT]	NOKIA SIEMENS NETWORKS GMBH [DE]; REDOL JOAO [PT]
CORREIA DE COSTA JOSE MANUEL [PT]; PEREIRA DE CONCEICAO MARIA ANT [PT]; PEREIRA MAGALHAES DA SILVA ELI [PT]; OLIVEIRA CASTRO ANTONIO MANUEL [PT]	INST NAC DE SAUDE DR RICARDO J [PT]; CORREIA DE COSTA JOSE MANUEL [PT]; PEREIRA DE CONCEICAO MARIA ANT [PT]; PEREIRA MAGALHAES DA SILVA ELI [PT]; OLIVEIRA CASTRO ANTONIO MANUEL [PT]

Table 6.4 USPTO patent applications by Portuguese assignees (2008)

Source: USPTO (ACN/PT and APD/1/1/2008->31/12/2008)

20090110722	COMPOSITION	CARDOSO DE VASCONCELOS; TEOFILO; (S. MAMEDE DO CORONADO, PT) ; DOS SANTOS LIMA; RICARDO JORGE; (S. MAMEDE DO CORONADO, PT) ; CERDEIRA DE CAMPOS COSTA; RUI; (S. MAMEDE DO CORONADO, PT)	BIAL- PORTELA & CA, S.A. (S. MAMEDE DO CORONADO, PT)
20090064873	WARM FOOD PRODUCT DISTRIBUTOR	BIANCHI; MARCO; (LIDO DI CAMAIORE, IT)	STARSTATUS TRADING INTERNACIONAL LDA (MADEIRA, PT)
20090037354	DOMESTIC INFORMATION SYSTEM BASED ON TIME, SPACE AND RELEVANCE	FERNANDES; THEO RANGEL CORREIA DA SILVA; (LISBOA, PT) ; CARDOSO; PEDRO NUNO RODRIGUES; (LISBOA, PT) ; DANADO; JOSE CARLOS DOS SANTOS; (MONTEMOR-O-NOVO, PT) ; MIGUEL DA CONCEICAO BILOU; TIAGO; (ALCABIDECHES, PT) ; NABIAS; FERNANDO MANUEL; (LISBOA, PT) ; SOARES SILVA; JOAO PEDRO TOJAL LOIA; (LISBOA, PT)	YDREAMS INFORMATICA LDA (COSTA DA CAPARICA, PT)
20090015113	INTERACTIVE DISPLAY CABINET	NABAIS NOBRE; EDMUNDO MANUEL; (LISBOA, PT)	YDREAMS INFORMATICA LDA (COSTA DA CAPARICA, PT)
20090001078	CONTAINER FOR LIQUIDS	CASSINA; VIRIGINO; (GORLE, IT)	DAVIPLAST-SERVICOS DE CONSULTORIA, SOCIEDADE UNIPE (FUNCHAL, MADEIRA, PT)
20080288652	NETWORK CORE ACCESS ARCHITECTURE	DE SOUSA; JOSE TEIXEIRA; (LISBOA, PT) ; LOURENCO; NUNO CALADO CORREIA; (LISBOA, PT) ; RIBEIRO; NELSON GONCALO DO ROSARIO; (LISBOA, PT) ; MARTINS; VICTOR MANUEL GONCALVES; (LISBOA, PT) ; MARTINS; RICARDO JORGE SANTOS; (LISBOA, PT)	COREWORKS, S.A. (LISBOA, PT)
20080257230	PALLET CONTAINER	CASSINA; VIRGINIO; (GORLE, BERGAMO, IT)	DAVIPLAST-SERVICOS DE CONSULTORIA, SOCIEDADE UNIPE (FUNCHAL, MADEIRA, PT)
20080169238	BIOSORPTION SYSTEM PRODUCED FROM BIOFILMS SUPPORTED IN FAUJASITE (FAU) ZEOLITE, PROCESS OBTAINING IT AND ITS USAGE FOR REMOVAL OF HEXVALENT CHROMIUM (CR(VI))	JESUS SIMOES CAMPOS TAVARES; MARIA TERESA; (BRAGA, PT) ; PONTES CORREIA NEVES; MARIA ISABEL; (BRAGA, PT)	UNIVERSIDADE DO MINHO (BRAGA, PT)





7. Research: Brief watch on entrepreneurship research about Portugal

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“... findings suggest that incentives should focus on the local production of knowledge and education for the sustained creation of high-growth firms in knowledge-based sectors.”

– Joana Mendonça, from "Knowledge creation and entrepreneurial activities in Portugal"



This section briefly describes recently published scientific research addressing the topic of entrepreneurship and technological change in Portugal. Various scientific articles and PhD theses published in the last two to three years are listed and described in Tables 7.1 and 7.2; selected abstracts follow. The analysis comprehends research papers published in international refereed journals within the period 2006-2009 that are referenced by the ISI Web of knowledge citations database. The methodological approach used in the PhD thesis description draws on

official information from the “Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais” (GPEARl) from the Portuguese Ministry of Science, Technology and Higher-Education (MCTES). All papers and PhD theses relate to validated and published research on technology-based entrepreneurial activity and entrepreneurship in general in Portugal. The studies selected were conducted by Portuguese and/or non-Portuguese researchers and performed in Portugal and/or in universities and research centers outside Portugal.

Table 7.1 Entrepreneurship research about Portugal

Authors	Year	Title	Journal
Mendonça, J; Baptista, R	2009	Proximity to knowledge sources and the location of knowledge-based start-ups	<i>ANNALS OF REGIONAL SCIENCE</i> , DOI: 10.1007/s00168-009-0289-4
Sanchez, JC	2009	Social learning and entrepreneurial intentions: a comparative study between Mexico, Spain and Portugal	<i>REVISTA LATINOAMERICANA DE PSICOLOGIA</i> Volume: 41 Issue: 1 Pages: 109-119
Baptista, R; Lima, F; Preto, MT	2008	Is there a labor market 'penalty' to entrepreneurship?	<i>Proceedings of the Sixty-Seventh Annual Meeting of the Academy of Management</i> , ISSN 0896-7911
Baptista, R; Escaria, V; Madruga, P	2008	Entrepreneurship, regional development and job creation: The case of Portugal	<i>SMALL BUSINESS ECONOMICS</i> Volume: 30 Issue: 1 Pages: 49-58
Teixeira, AAC, Santos, P; Brochado, A	2008	International R&D cooperation between low-tech SMEs: The role of cultural and geographical proximity	<i>EUROPEAN PLANNING STUDIES</i> , Volume: 16 Issue: 6, Pages: 785-810
Baptista, R; Thurik, AR	2007	The relationship between entrepreneurship and unemployment: Is Portugal an outlier?	<i>TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE</i> Volume: 74 Issue: 1 Pages: 75-89
Moutinho, PSF; Fontes, M; Godinho, MM	2007	Do individual factors matter? A survey of scientists' patenting in Portuguese public research organizations	<i>SCIENTOMETRICS</i> Volume: 70 Issue: 2 Pages: 355-377
Baptista, R; Preto, MT	2006	The dynamics of causality between entrepreneurship and employment	<i>2006 IEEE International Conference on Management of Innovation and Technology</i> , Vols 1 and 2, Proceedings Pages: 66-70
Marques, JPC; Caraca, JMG; Diz, H	2006	How can university-industry-government interactions change the innovation scenario in Portugal? The case of the University of Coimbra	<i>TECHNOVATION</i> Volume: 26 Issue: 4 Pages: 534-542
Mendonça, J; Baptista, R; Conde, P	2006	Mapping knowledge bases in the Portuguese chemical industry	<i>2006 IEEE International Conference on Management of Innovation and Technology</i> , Vols 1 and 2, Proceedings Pages: 248-252

Table 7.2 List of theses (PhD)

Author	Supervisors	Institution	Year	Title
Joana Serra da Luz Mendonça	Rui Miguel Loureiro Nobre Baptista; Francisco Miguel Garcia Gonçalves de Lima	UTL - Instituto Superior Técnico	2009	The impact of knowledge creation and accessibility on entrepreneurial activities
Miguel Simões Torres Preto	Rui Miguel Loureiro Nobre Baptista; Francisco Miguel Garcia Gonçalves de Lima	UTL - Instituto Superior Técnico	2009	Essays on the impact of entrepreneurship on careers and earnings
Lúisa M. C. Carvalho	Soumodip Sarkar	Universidade de Évora	2008	Empreendedorismo e inovação: um modelo para o sector dos serviços
António Miguel Areias Dias Amaral	Rui Miguel Loureiro Nobre Baptista; Francisco Miguel Garcia Gonçalves de Lima	UTL - Instituto Superior Técnico	2007	The dynamics of entry, exit and re-entry into entrepreneurship: A longitudinal analysis for Portugal
Fernando António da Costa Gaspar	Mário Patinha Antão; Luís Fé de Pinho	Universidade Lusíada	2006	A influência do capital de risco e da incubação de empresas no empreendedorismo e na mortalidade das empresas

Human capital and entrepreneurial activity in Portugal

Miguel Amaral

This research tackles the dynamics of how individuals enter, survive and exit entrepreneurial activities, with emphasis on habitual entrepreneurs. The project focuses on general and specific human capital as a predictor of individuals' decision to enter entrepreneurship and its impact on their subsequent occupational path: exit and re-entry. The empirical approach combines economic and econometric modeling using matched employer-employee longitudinal data to examine individuals' occupational behavior and entrepreneurs' careers across time in Portugal.

One of the main findings when looking at the role played by individuals' human capital in their decision to start or acquire a firm is that higher (tertiary) education has no significant effect on the probability of switching from paid labor to entrepreneurship, while there is a positive effect associated with secondary education. Above all, this reflects the composition of the Portuguese labor force, since people with tertiary education are a small minority. Given that the returns to education are likely to be very high in paid employment for this minority, relative to the remaining labor force, the opportunity cost of switching to entrepreneurship should be very high. This effect will likely offset the expected positive effect that would result from the fact that more educated individuals should be more capable of recognizing opportunities and implementing businesses to exploit those opportunities.

Second, we explore differences between the individual and firm-level factors influencing the modes of entrepreneurial exit – i.e. "sell-out" and "dissolution". Results from estimations on these two different modes of entrepreneurial exit provide support for the claim that heterogeneity exists across forms of exit, involving individual and firm-level characteristics. Some of the factors influencing exit are related to demographic variables such as gender; entrepreneurs' age of retirement; and earnings, professional experience, and composition of the entrepreneurial team. In what concerns human capital and experience, results show that while a negative effect on sell-out was found for individuals with non-employment experiences, the effect is also negative for years of experience in the two remaining occupations – paid-employment and entrepreneurship. Additionally, the fact that entrepreneurs have university education increases the likelihood of exiting entrepreneurship, whether by selling or closing the firm.

Finally, the project focuses on how individuals' general and specific human capital influence their decision to re-enter entrepreneurship in a different business, thereby becoming serial entrepreneurs. The empirical analysis distinguishes the effects of general human capital – measured as formal education and paid-employment experience – and entrepreneurial specific human capital – measured as years in entrepreneurship, managerial attainment and "positive founding experience" – upon the decision to re-enter entrepreneurship. Results reveal a negative effect of general human capital on the hazard of becoming a serial entrepreneur, whereas the impact of entrepreneurial-specific human capital on re-entering entrepreneurship is overall positive.

Selected publications:

- Amaral, A.M. and R. Baptista (2007). Transitions from paid-employment into entrepreneurship: An empirical study for Portugal. *Entrepreneurship in Europe: New Perspectives*, Edward Elgar, Cheltenham, UK.
- Amaral, A.M., R. Baptista, and F. Lima (2008). Serial entrepreneurship: The impact of human capital on time to re-entry. (Submitted to *Small Business Economics Journal*)
- Amaral, A.M., R. Baptista, and F. Lima (2009). Becoming an ex-entrepreneur: Firm performance and the sell-or-liquidate decision. In *Entrepreneurship and Growth in Local, Regional and National Economies*. Eds. Smallbone D., Landström, H. & Jones-Evans, D., Edward Elgar, Cheltenham, UK, Forthcoming 2009.

Knowledge creation and entrepreneurial activities in Portugal

Joana Mendonça

Knowledge creation and knowledge spillovers are essential elements in stimulating economic development, and technology-based firms are seen as an important source of new employment and important promoters of technological change. The commercialization of knowledge depends on knowledge generation by universities and public R&D labs as well as on R&D activities by firms. A low level of new business formation in knowledge dependent sectors should be associated with a lack of knowledge-generating sources. Knowledge is recognized as a critical resource in explaining performance differences and innovation. The ability to create and apply knowledge across firms and regions is essential to gain and sustain competitive advantage and achieve growth.

Our research has looked at the entrepreneurial process, focusing on the role played by knowledge creation and dissemination, embedded in firms, individuals, and regions. Research regarding activities by new firms, behavior of business owners, careers and regional entrepreneurial activities have been developed through the Quadros de Pessoal database, using individuals, firms and regions as units of analysis.

Results show that knowledge creation and accessibility contribute significantly to the development and success of knowledge-based activities. Knowledge embodied in individuals, whether in firms or in regions, is deemed to influence the creation and performance of new knowledge-based firms. Moreover, universities play a role in stimulating the activities in knowledge-related activities in regions. The results show that the location of new firms is indeed shaped by their access to knowledge and by the type of knowledge available in the surrounding environment. In addition, it was found that new universities can stimulate the creation of new firms, and that this effect is mainly significant for knowledge-based firms. These findings suggest that incentives should focus on the local production of knowledge and education for the sustained creation of high-growth firms in knowledge-based sectors.

Selected publications:

- Mendonça, J. and R. Baptista (2008). Proximity to knowledge sources and the location of knowledge based start-ups, *Annals of Regional Science*, forthcoming
- Mendonça, J., R. Baptista, and F. Lima (2009). Creation of higher education institutions and entry of knowledge-based firms. In *Entrepreneurship and Growth in Local, Regional and National Economies*. Eds. Smallbone D., Landström, H. & Jones-Evans, D., Edward Elgar, Cheltenham, UK, Forthcoming 2009.
- Mendonça, J. (2009). The impact of knowledge creation and accessibility on entrepreneurial activities. PhD Dissertation, *Mimeo Instituto Superior Técnico*, Universidade Técnica de Lisboa.

Knowledge management and innovation: Firm-level evidence from Portugal Pedro Faria

It is broadly accepted that research and development (R&D) and innovation are essential to the performance of firms. More precisely, firms assign resources to innovation when they identify scientific and technical opportunities that may generate a market for new products and processes. Process innovations allow firms to improve the quality of products or lower the costs of production, generating gains in market share and profits. Through product innovations firms can gain a competitive advantage by differentiating their output.

A major result in the innovation literature is the network and interactive nature of the innovation process at the firm level, since firms depend heavily on the interaction with their environment. Firms manage the external information flows in order to maximize the incoming knowledge and rent spillovers from partners and non-partners, and control the spillovers towards non-partners. In order to do so, firms must try to increase the extent of incoming spillovers by investing in absorptive capacity. Having a higher absorptive capacity enables a firm to access, assimilate and exploit greater amounts of knowledge. The ability of a firm to be able both to take advantage of knowledge generated by others and to protect its own knowledge has a positive impact on the likelihood of becoming a successful innovator. Moreover, such a capacity is linked to the willingness to undertake formal collaborative research with other firms and institutions.

The positive relationship between innovation and firm performance on the one hand, and, on the other hand, the internal and external strategies developed by firms to make the most of this relationship, are the main motivations of my research agenda. The aim is to provide a comprehensive examination both of the way in which firms manage knowledge, at the internal level, and how they design their interactions with external partners. The Community Innovation Survey provides a mechanism for analyzing the diversity of innovation processes within Portuguese firms, since it is able to capture innovation activities other than simply R&D expenditures.

Selected publications:

- Faria, P. (2006). Entrepreneurship, Growth, and Innovation: The Dynamics of Firms and Industries, Santarelli, E. (Ed.). International Studies in Entrepreneurship. XIII, 285 pp. Springer, Berlin 2006.
- Faria, P. (2008). Knowledge Management and Innovation: Firm Level Evidence from Portugal. PhD Dissertation, *Mimeo Instituto Superior Técnico*, Universidade Técnica de Lisboa.
- Faria, P. and W. Sofka (2009). Formal and Strategic Knowledge Protection Strategies of Multinational Firms – A Cross Country Comparison. (Submitted to *Strategic Management Journal*)

Impact of entrepreneurship on careers and earnings

Miguel Torres Preto

Nowadays, most individuals have some (even if indirect) connection with entrepreneurship and self-employment. This research examines two main issues regarding the effect of entrepreneurial human capital in the Portuguese labor market: (1) the post-exit life of entrepreneurs, i.e. how do they fare in the labor market when compared with other individuals who were never entrepreneurs, and (2) the role played by business owner characteristics, in particular entrepreneurial human capital, on the internal organization of the firm. This analysis gauges the market value of entrepreneurial skills, thus trying to make a contribution to the entrepreneurship and labor market literature. The empirical work was conducted using a matched employer-employee data set for Portugal in the period 1995-2003.

Few studies have addressed what happens to ex-entrepreneurs who have sought and found wage employment. Research comparing earnings of former business owners who have become wage employees with those of others of similar age and educational background who did not experience self-employment over their careers has provided mixed results and generally failed to account systematically both for the matching between worker and firm characteristics, and the specifics of career dynamics within firms. The results suggest that there are significant differences in career mobility between former business owners and individuals who were always wage employees. While former business owners are, on average, paid less than other workers in the same hierarchical level, they enter firms at higher job levels and progress faster up the hierarchy, earning a labor market premium for entrepreneurial experience. The worker-firm match plays a significant role in generating this result, which contradicts previous empirical works on the subject.

The background and personal characteristics of the founders are also determinants of personnel policies, affecting the way hierarchies are structured and wages are set. Founders with higher levels of general and specific human capital are more likely to design firms focused on growth and should hire better quality human capital. Results suggest that business founders seek employees who have similar (observable) characteristics. Moreover, workers seem to be more protected from labor market fluctuations while progressing up the job ladder in firms with higher levels of business owner general and specific human capital. Business owner education also has an effect on the internal organization of the firm, since a less compressed wage structure is associated with more educated business owners. The difference between wages at the top of the hierarchy and wages at the bottom is higher in firms with more educated business owners.

Selected publications:

- Preto, M.T., R. Baptista and F. Lima (2008). Is there a labor market "penalty" to entrepreneurship? In George T. Solomon (Ed.), *Proceedings of the Sixty-Seventh Annual Meeting of the Academy of Management*, ISSN 0896-7911.
- Preto, M.T. (2009). Essays on the impact of entrepreneurship on careers and earnings. PhD Dissertation, *Mimeo Instituto Superior Técnico*, Universidade Técnica de Lisboa.
- Preto, M.T., R. Baptista, and F. Lima (2009). Switching from paid employment to entrepreneurship: The effect on individuals' earnings. In *Entrepreneurship and Growth in Local, Regional and National Economies*. Eds. Smallbone D., Landström, H. & Jones-Evans, D., Edward Elgar, Cheltenham, UK, Forthcoming 2009.





8. UTEN organization & partners



The University Technology Enterprise Network at work: International colleagues meet and discuss current concerns about technology commercialization.

UTEN was launched by the Portuguese Science and Technology Foundation, FCT, with the support of the Portuguese Institute of Industrial Property, INPI, as an “informal” network of all 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, working together with the IC² Institute at The University of Texas at Austin. It was created to facilitate, lead, and accelerate the commercialization of science and technology driven by the Portuguese research infrastructure, as well as to stimulate the involvement of the Portuguese research community in new international

joint ventures in science and technology and related economic activities for emerging markets worldwide.

UTEN has been promoted to strengthen international dialogue and to provide new networking opportunities for Portuguese technology transfer and commercialization offices and technology-based companies and start-ups in close cooperation with the IC² Institute, The University of Texas at Austin, among other leading institutions worldwide in the area of technology transfer and commercialization. The continuous involvement of experts from leading institutions worldwide is to be catalytic, to vigorously share, describe and discuss actions

and acting as a sounding board to the Portuguese participants.

UTEN is run through a Joint Operating Board, which is chaired by the President of FCT (or a representative) and include INPI's President, the President of the Portuguese Innovation Agency, the Director of the Austin Technology Incubator (ATI) and UTEN Directors (Portugal and Austin). Executive teams in 2008-2009:

Portugal:

- *Director:* José Manuel Mendonça, President, INESC PORTO, School of Engineering, University of Porto
- *Co-director:* Teresa Mendes, IPN, University of Coimbra
- *Executive Team:* Ana Paula Amorim (ILO), Joana Ferreira, and Grasiela Almeida.

Austin:

- *Director:* David Gibson, Associate Director, IC² Institute
- *Co-director:* Isaac Barchas, Director, Austin Technology Incubator, the IC² Institute
- *Executive Team:* Robert A. Peterson (Principal Investigator), James Jarrett (Senior Research Scientist), Cliff Zintgraff (Program Manager, business development), Eli Mercer (Program Manager, training and internships).

8.1 Portuguese Partners

FCT: Fundação para a Ciência e a Tecnologia

FCT started 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, and
3. To 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 presented by institutions, research teams or individuals in open calls, 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, 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.

INPI: Instituto Nacional da Propriedade Industrial

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.

Considering that universities and the R&D Institutes are two of the most relevant users of the Industrial Property System in Portugal, it is INPI's intent to make available instruments and measures which will enable these institutions to safely introduce the results of their research into the market. This can only be achieved by applying the best practices of technology and knowledge transfer. INPI considers the UTEN Program an outstanding opportunity to foster the creation of a sustainable network of technology transfer offices in Portugal.

University and institutional partners across Portugal

In order for UTEN to succeed, it is essential for university and institutional partners across Portugal to move further into the international marketplace. Table 8.1 lists organizations that have joined in this effort and following the table are brief descriptions of some of these organizations.

Table 8.1 University & institutional Portuguese partners

Main Technology Transfer Office Involved	Institution	UTEN Focal Point
INESC Porto - Associate Laboratory (Instituto de Engenharia de Sistemas e Computadores do Porto)		José Mendonça
IMM - Associate Laboratory (Instituto de Medicina Molecular)		Carmo Fonseca
UATEC (TTO - Technology Transfer Unit)	University of Aveiro	José Rainho
GAPI grupUNAVE (Office for the Promotion of Industrial Property)		Fernando Santos
TecMinho (TTO and GAPI)	University of Minho	Marta Catarino
Spin-Valor (Consulting in Business Management & Scientific Development)		Avelino Pinto
UPIN (includes GAPI and OTIC-UP)	University of Porto	Maria Oliveira
UPTEC (Science & Technology Park)		Carla Gonçalves
OTIC UC (TTO - Technology Transfer Office)	University of Coimbra	Jorge Figueira
IN+ (Center for Innovation, Technology, and Policy Research)	Instituto Superior Técnico (IST)	Paulo Ferrão
GAPI GALTEC (Office for the Promotion of Industrial Property)		Aldina Carvalho
Algarve TransferTECH (TTO - Technology Transfer Office)	University of Algarve	
GAPI UALG (Office for the Promotion of Industrial Property)		Adriano Pimpão
OTIC-UTAD (TTO and GAPI)	University of Trás-os-montes e Alto Douro	Carla Mascarenhas Miguel Baccelar
UBIATIVA (TTO - Office of Technology and Knowledge Transfer)	University of Beira Interior	Dina Pereira Pedro Serrão
TECMU (TTO - Madeira/University Technology and Knowledge Transfer)	University of Madeira	Carlos Lencastre
DPI - Service of Science and Cooperation (TTO)	University of Évora	José de Almeida
TTC@UL (TTO - Technology Transfer Office)	University of Lisbon	José Paixão Cristina Rebelo
OTIC UNL (TTO - Center of Innovation and Value Creation)	University Nova de Lisbon	Paulo Pinho
OTIC UTL (TTO - Technology Transfer Office)	Technical University of Lisbon	Maria Crespo
OTIC IPP (TTO - Technology Transfer Office)	Polytechnic Institute of Porto	Luís Metello
GAPI (Office for the Promotion of Industrial Property)	Madeira Tecnopólo	Pedro Mota
GAPI (Office for the Promotion of Industrial Property)	Madan Parque (Science & Technology Park of Almada/Setúbal)	Alcino Pascoal
GAPI (Office for the Promotion of Industrial Property)	Taguspark (Science & Technology Park)	Patrícia Lima
INOVA (Institute of Technological Innovation of Açores)	University of Açores	J. Luz J. Medeiros
INDEG/Audax (Entrepreneurship and Family Businesses)	ISCTE (Superior Institute of Labor and Enterprise Sciences)	Ana Fonseca Rui Ferreira
TRANSMED (Valorization of Biomedical Knowledge and Technologies)	Portuguese Catholic University (School of Biotechnology)	F. Xavier Malcata
IPN (Institute Pedro Nunes)		Carlos Cerqueira
INOVISA (Association for Innovation and Business Development - Higher Institute of Agronomy, ISA)		Luis Mira
CPIN BIC (Centre of Innovation and Business Promotion)		Maria Francisco
ICAT (Institute of Applied Science and Technology)		José Paixão Cristina Rebelo
Avepark (Science and Technology Park)		Carlos Remísio
Spinpark (Technology-based Incubator)		Avelino Pinto
PARKURBIS - Science and Technology Park of Covilhã		Daniela Marta
Sines Tecnopólo		Roberto de Souza
Institutional Partners		
FCT - Portuguese Foundation for Science and Technology		Vasco Varela
INPI - Portuguese Institute of Industrial Property		Dina Chaves Telmo Vilela
AdI - Portuguese Innovation Agency		Lino Fernandes



INESC Porto LA

Inst. de Eng. de Sistemas e Computadores do Porto
José Manuel Mendonça

From knowledge production to science-based innovation: INESC Porto is a private, non-profit, public interest institution. INESC Porto LA is an association of this institute with several autonomous research units under common research policy and management. It has been recognized by the Ministry of Science with the statute of Associated Laboratory classified as Excellent.

Porto LA is a center of excellence in several areas, from research in Optoelectronics to applications in Power Systems. Other areas of research include Telecommunications and Digital Media, Manufacturing Systems Engineering, Intelligent Systems, Machine Learning, Computer Science, Information Systems and Innovation Management.

For Porto LA, incubating and nursing new companies is as natural as creating knowledge. Research projects lead to scientific papers and academic training, but they may also lead to novel technology-based businesses. Researchers at INESC Porto LA find an environment that supports them in generating tech-based companies. Spin-off launching is a risky but thrilling activity and INESC Porto LA has successful venture capital partnerships in several new business projects. Since 2000, INESC Porto LA has incubated around 16 companies, in most cases addressing global markets.

The concept of science-based innovation permeates all the activities in INESC Porto LA. Transforming knowledge into innovation requires multidisciplinary teams and an effective relationship with economic agents, with patenting and technology licensing becoming increasingly important components of a process aimed at speeding up technology transfer to industry.

IMM

Instituto de Medicina Molecular
University of Lisbon Medical School
Carmo Fonseca

The Instituto de Medicina Molecular (IMM) is a research institute with the mission to foster basic, clinical and translational biomedical research – with the goal to better understand disease mechanisms, develop novel predictive tests, diagnostics and therapeutic approaches. Created in 2004 and located on the campus of the University of Lisbon Medical School and the Santa Maria Hospital, IMM has acquired the special status of Laboratório Associado 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 31 independent research groups (circa 350 researchers), whose interests fall within three major IMM research lines: molecular & developmental biology, immunology & infection, and neurosciences. Its physical proximity to both the hospital and the medical school creates opportunities to bridge “bedside” research and promote translational research. In addition, the institute hosts and collaborates with a number of start-up and biotechnology companies in areas of biomedical technologies and sophisticated health care delivery.



UATEC

Unidade de Transf. de Tec.
Universidade de Aveiro
José Paulo Rainho

The University of Aveiro serves as a public institution to intervene and develop graduate and post-graduate education, research, and society cooperation. Founded in 2006, UATEC provides technology transfer activities to the university including:

- R&D consortium promotion
- Technology-based companies creation support (spin-offs and start-ups)
- Technology-based entrepreneurship promotion
- Intellectual property promotion and valorization
- Technology licensing promotion and knowledge valorization
- Business innovation and university/company collaboration promotion.

After only three years, UATEC's success metrics include:

- 170 R&D company contracts
- Creation of 10 spin-off companies and 12 start-up companies
- Training of approximately 400 entrepreneur and articulation of 60 business plans
- Approximately 35 patent license registrations
- Approximately 15 technology transfer contracts
- Approximately 150 services-rendered contracts with companies to facilitate innovative products and processes.

UATEC's team includes José Paulo Rainho/coordinator, Mabilia Condesso/legal services, Ana Teresa Pinto/project manager, Marlos Silva/project manager, and Lúcia Oliveira/assistant.

TecMinho

includes OTIC-Minho and GAPI
Universidade do Minho
Marta Catarino

TecMinho is the interface of the University of Minho (UMinho) for the management of its intellectual property and supporting knowledge transfer through licensing, strategic partnerships with industry and the setting-up of knowledge-intensive spin-offs. TecMinho has been active in this field for more than 15 years, with a world-class track record of patent portfolio management and technology marketing. TecMinho was awarded in 2006 "Best Knowledge Transfer Plan from an Established TT Office" by ProTon Europe, the European Association of Tech Transfer Offices from Public Research Organizations.

At the national level, University of Minho ranks third in terms of scientific production, number of scientists and students (graduate, postgraduate), and ranks first in terms of collaborative research with industry. As the knowledge transfer office of University of Minho, TecMinho's mission is to maximize the valorization of the IP portfolio. With the aim to develop innovative dynamics in innovation and technology transfer, another central action line of TecMinho consists of promoting and participating in national and transnational projects. Finally, in its support services targeting companies, TecMinho offers solutions and consultancy services for companies R&D, innovation and IP needs through a unique access point to its internal services, the universe of knowledge of UMinho through its R&D centers of excellence and its academic spin-offs' network.

Simultaneously supporting both researchers to exploit R&D results and companies to define their technology needs, TecMinho promotes the establishment of successful strategic partnerships.

UPIN

Universidade de Porto Inovação
Universidade de Porto
Maria Oliveira

University of Porto (U. Porto) is the largest higher educational institution in Portugal. With 15 schools and 69 research units, it covers all science fields and generates knowledge across a wide span of educational disciplines. The Knowledge and Technology Transfer Office of U. Porto supports the link between the academic and private sectors, acting in the fields of intellectual property (IPR), technology transfer (TT), entrepreneurship and spin-off creation, and university-industry relations. UPIN is certified by the National Structural Funds Managing Authority to provide services in the areas of RTD, TT and IPR. It is engaged in national and international networks: OTIC (Portuguese Network of Technology and Knowledge Transfer Workshops); GAPI (Portuguese Network of Industrial Property Promotion Units); TII (Technology Transfer and Innovation Association); ProTon Europe (European Knowledge Transfer Association) and the University Technology Enterprise Network (UTEN), a joint initiative with The University of Texas at Austin (USA), the Portuguese Ministry of Science and Education, and participating TT offices in Portugal.

UPTEC

Associação de Transferência de Tecnologia da Asprela
University of Porto
Carla Gonçalves

The UPTEC is a structure that supports and stimulates the creation of advanced technology-based projects. Currently located in the University Campus of Asprela, Campo Alegre and Coronel Pacheco, the UPTEC leads technological entrepreneurship, enabling ideas that pave the way for big business. In UPTEC entrepreneurs can find support to realize their ideas, something that can stimulate the creation of technology-based start-ups. Moreover, existing enterprises can find mechanisms to perform their projects, in order to transfer knowledge and technology from the University of Porto. Currently, the Science Park is in the process of expansion and is expected to create more three associated centers dedicated to the sea, the creative industries and agriculture.

OTIC UC

Oficina de Transferência de Tecnologia e de Conhecimento
Universidade da Coimbra
Jorge Figueira

Founded in 1290, the University of Coimbra has eight faculties with more than 2,000 members and researchers, more than 150 R&D units, and 23,000 students. The most international university in Portugal, UC also has 1,572 students coming from 60 different countries. The university actively supports and invests in facilities and resources to promote innovation and the climate for spin-out company creation while it collaborates with other educational institutions and with business and industry institutions worldwide. IPN, a successful technology business incubator, was established in the early '90s, and more recently, the Knowledge Transfer Office (GATS.UC) was established in 2003. GATS activities include:

- Technology scouting
- Public private partnerships
- IP management and licensing
- Funding opportunities
- Promoting conferences, seminars and training courses
- Promoting an entrepreneurial spirit within the community

UC promoted the creation of Biocant, a biotechnology science park and R&D center to help serve the emerging biotechnology cluster in central Portugal, and more recently has invested in Coimbra i-Park to serve as technology park to Coimbra.



IN+

Centre of Innovation, Technology and Policy Research
Instituto Superior Técnico
Paulo Ferrão

The multidisciplinary activities of IN+ link basic and applied research to technology development that focuses on sustainability issues including environmental issues, 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 on 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 IC² Institute, The University of Texas at Austin.

Among other awards, in 2005 the center was named one of the "Top 50 global centres of research on Management of Technology", by the Int'l Association for the Management of Technology, IAMOT.

OTIC-GAPI UTAD

Oficina de Transf. de Inovação e Conhecimento & Gabinete de Apoio à Promoção da Propriedade Industrial

Univ. de Trás-os-montes e Alto Douro

Carla Mascarenhas

Miguel Bacelar

Univ. de Trás-os-montes e Alto Douro has a mission of teaching (8,300 students), research, and extension. Research activities at UTAD are concentrated in eight research centres with 300 researchers. The technology transfer office has been established for only 3.5 years, but has provided strong university support in intellectual property and technology transfer. The different background studies, e.g., biology and engineering, of the technology transfer team results in a higher value for the office.

The Univ. de Trás-os-montes e Alto Douro has a wide portfolio of patents in several areas including ambient and renewable energy, chemistry, agriculture, mechanics, and engineering. One of these patents has been licensed by the technology transfer team, and six others are under negotiation.



UBIACTIVA

Office of Technology and Knowledge Transfer
University of Beira Interior
Dina Pereira
Pedro Serrão

UBI is involved in many R&D projects and consortiums in the following technology fields: aeronautics, computing, electro mechanics, healthcare, mathematics, optics, telecommunications, textiles and paper materials. UBI helps to analyze new technologies for commercialization potential. UBI also promotes and supports university-company consortia that are necessary for the resolution of concrete company problems. UBI helps to identify key areas for the creation, development and commercialization of new technologies and innovative services, entrepreneurship and technology transfer including spin-offs at national and international levels.

TECMU

Transf. de tecnologia e Conhecimento Madeira/
Universidad
Universidade da Madeira
Carlos Lencastre

TeCMU facilitates interaction between scientific and technological units and the business world in order to help promote the development of new technology products or services that are adapted to the needs of the regional market. At the same time, the aim is not only to speed up these transfer processes to the entrepreneurial world and to technology-based start-ups or spin-outs, but also to consolidate initiatives for the dissemination of industrial and intellectual property. Some of its specific objectives include:

- monitoring technologies developed within the University of Madeira for technology transfer potential
- identifying society's needs that can be met through technology innovation
- facilitating partnerships and project development between UMa and the business sector
- increasing communication with local businesses in order to increase the university's ability to provide viable workforce training, life long learning, and specialized training in innovative areas
- protecting and managing the intellectual property (IP) developed at UMa, including its partnered projects
- promoting the launch of technology-based companies that begin in the university laboratories (spin-outs)
- elaborating technology transfer contracts (licensing and/or concession contracts) and confidentiality contracts during the technology transfer process



DPI Évora

Divisão de Projectos Informação

Univ. de Évora

José Antunes Afonso de Almeida

Our Mission is to effectively transfer university technologies to the market so as to generate benefits for the university, the community and the general public. Our team offers a full set of services to ensure effective knowledge and technology transfer:

Management of University of Évora's Scientific Information System – composed by the digital repository of scientific publications; the researcher's CV management system; the projects management system, as well as the contracts and protocols management system

The University of Évora Research Guide and the Annuary of Scientific Publications Abstracts

R&D and KTT Info – SCC-DPI provides information and supports the applications towards financing programs of researcher mobility, R&D projects and entrepreneurship

Promote national and international TTO and LTO networks, fostering effective and efficient technology transfer and licensing; also focuses on the promotion of intellectual property and its management inside the university community

Technological scanning – provide the faculty advice about potential knowledge and tech transfer issues during research activities and to assist in the invention disclosure process

University to enterprise – regional economical actors count on university as a mean to access to potential opportunities for the creation and development of technologies and businesses

OTIC UNL

Oficina de Transf. de Inovação e Conhecimento e Conh. da UNL

C. Inovação e Criação de Valor

Paulo Pinho

The Universidade Nova de Lisboa (UNL) is the youngest public institution for higher education and scientific research within the Lisbon metropolitan area. The university has over 14,000 students, 1,400 teachers and 800 employees and is located on three separate campuses. It consists of five faculties, three institutes and one school. It offers 31 graduate courses (1st cycle), 81 masters (2nd cycle) – 3 of which are Erasmus Mundus – and 10 integrated master's programs, besides doctoral (3rd cycle) and post-graduate courses.

The UNL Entrepreneurship Department's mission is to develop the entrepreneurship ecosystem across campus and within Lisbon. Entrepreneurship education activities include Techpreneur (a short but intensive entrepreneurship training program), an entrepreneurship MSc course for all UNL students, and entrepreneurship seminars. Other entrepreneurship opportunities include START, a national entrepreneurship contest produced in cooperation with BPI and OPTIMUS; Nova Idea Competition, a university-wide business plan competition that provides integrated learning and multidisciplinary work; and E-Day – Entrepreneurship Day, an annual celebration to involve the local community and UNL students in entrepreneurial activities.



OTIC UTL

Oficina de Transf. de Tecnologia e de Conhecimento da UTL

Universidade Técnica de Lisboa
Maria do Céu Crespo

UTL's mission and goal is to promote, develop and transfer scientific, technique and artistic knowledge in its specific intervention areas, with quality as a driver for modern thinking and adjusted to the dynamic needs of society. Pursuing this goal, in 2006, UTL created its technology and knowledge transfer office, OTIC|UTL responsible for supporting students, teachers and researchers.

Since 2006, OTIC|UTL has organized five courses in entrepreneurship and intellectual property protection, has helped patent two technologies, and has made two successful technology transfers. Currently OTIC|UTL is negotiating with Angola for technology and knowledge transfer in areas such as agriculture, economics, and entrepreneurship. Parallel to these activities, OTIC|UTL also promotes the Entrepreneurial Creativity Contest to stimulate entrepreneurial activities among UTL researchers and students.

OTIC|UTL is a burgeoning office primarily concerned with establishing a strong relationship with researchers in order to promote effective results in technology transfer and commercialization.

The team is led by vice-rector Professor Vítor Gonçalves. The rest of the team is composed of Maria do Céu Crespo (liaison and activity coordinator), Eduarda Camilo and Joana Soares.

Polytechnic Institute of Porto

Centre of Creative and Applied Knowledge
Luís Francisco Metello

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 fifty 1st and 2nd Cycle Degree Courses. Characterized by a teaching team of more than 1,300 highly skilled and trained scholars and researchers. It aggregates seven distinct organic units, integrating more than 35 active research centers, with around 17,000 students, and more than 360 non-teaching collaborators.

Polytechnic Institute of Porto is a role model of success and ambition. Being rated in the first five places of the national access ranking list, the Polytechnic Institute of Porto was, in 2008, the national Polytechnic Institute that received the largest number of new students.



GAPI at Madeira Tecnopólo

Gabinete de Apoio à Promoção da Propriedade Industrial

Madeira Tecnopólo
Pedro Mota

In recent years, GAPI Madeira has developed strategies for promoting applications for patent protection with the University. These are supported by industrial property (IP) policies, marketing materials and activities, intellectual property policies, staff, and procedures dedicated to achieving that goal.

An overall strategy and marketing activities have been carried out - IP tool kit, IP brochures, workshops and seminars, website development, questionnaires, and structured interviews.

The approach to IP policy drafting and the different procedures for identification and selection of patentable inventions have been the GAPI's primary target.

GAPI Madeira is, at first, an interface – an organization that is in the boundary of another (typically, but not limited to, a university) or between two others (university and company). Thus, its mission must be aligned with that of both parties whom it is trying to bring together; specifically, not just the party that often controls the management of the technology – the university – but also the companies.



Taguspark, GAPI

Parque de Ciência e Tecnologia (includes GAPI)

Patrícia Lima

Taguspark is designed for the investment of companies and entities creating social development, always supported by the dynamics of knowledge and technological and scientific innovation, where scientific discoveries and applications as well as the 21st century new models move towards a society rooted in well-being, health, and a sustainable environment for all mankind.

The three structuring pillars of the Science and Technology Park - universities, R&D institutions and companies – integrate a project where the management and administration of Tagusparque S.A. implements innovation incubators for companies devoted to the commercialization of scientific investigation results and distribution of new technical skills into the labor market.

Thus, Taguspark also creates conditions for the development of working skills, innovation, and investigation of both women and man working therein and of all tenants – assuming the role of a social and economic engine for the region.

The park's concept includes not only the buildings of companies or universities, the working station and inherent working instruments, but also the circumstances in which the producing activity is carried out: certified buildings, natural spaces with little impact on buildings, support for sports activities, catering, cultural and recreation services, transportation networks, and schools for children and teenagers.

Access to specialized human resources, specialized R&D services, and information technologies, telecommunications, electronics, multimedia and the internet in an innovative entrepreneurial environment are important advantages in a park that offers one of the most advanced telecommunications technologies in the country, which connects all buildings to three digital plants.



INDEG/AUDAX

Empreendedorismo e Empresas Familiares
Instituto Superior de Ciências do Trabalho
e da Empresa
Ana Fonseca
Rui Ferreira

Established in July 2005, the AUDAX Center is committed to supporting and promoting the entrepreneurial spirit, sustainable self-employment, potential entrepreneurs and family businesses that demonstrate an innovative capacity.

AUDAX serves three main objectives: 1) to create post graduate and specialized training courses on entrepreneurship, business start-ups, and family business management; 2) to promote investment vehicles for start-up projects and early-stage businesses that originate in universities and support technology transfer; 3) to provide specialized consultancy services in areas such as corporate finance, marketing, strategy, human resources, technology, and innovation; and 4) to develop and support research projects promoting entrepreneurship and family business management.

In association with FCUL/UTL–Science Faculty, AUDAX provides support across several stages of the technology transfer process: research to explore the idea and proof-of-market for new technologies (concept and partner contacts), market and technology development (product demonstration), product and business development (license agreements, product sales) and exit. The AUDAX team includes Rui Ferreira, Ana Fonseca, Luís Martins, and Cláudia Barbosa.



IPN including GAPI

Instituto Pedro Nunes including Gabinete de Apoio à
Promoção da Propriedade Industrial
Carlos Cerqueira

Instituto Pedro Nunes is Coimbra University's (UC) tech transfer organization, with the mission to leverage strong university/enterprise relationships for innovation and entrepreneurship, acting in three areas: R&D and Consulting services; business incubation; specialized training; and science and technology promotion.

IPN has six R&D labs and a business incubator that promotes the creation of technology-based companies, supporting innovative ideas from its own labs, universities and entrepreneurs. As a transversal support, the Innovation Department (VCI IPN) provides services on intellectual property (IP), support to R&D projects, marketing and technology commercialization. With its four dedicated staff members, VCI IPN has a strong record on R&D project management, tech transfer, innovation and IP promotion:

- 34 Patent applications filed by UC with VCI IPN support
- 450 Trademarks filed with VCI IPN
- 10 Designs filed with VCI IPN support
- 11 IP reports (tech based companies)
- 10 Training events (95 attendees)

IPN recently won 2nd place in the "Best Science Based Incubator" Competition, out of a total of 53 science-based incubators from 23 countries.

The award was endorsed during the 7th Annual Incubator Conference held in Paris on December 2008, based on performance indicators and the opinion of a jury. Some interesting figures are a total number of companies supported higher than 100 (80% still active), a 2008 joint annual turnover above 50 M euros, and the creation of more than 1,000 jobs.



INOVISA

Assoc. para Inov. e Desenv. Empresarial
Instituto Superior Agronomia
Luís Mira

INOVISA is a private non-profit institution aiming at promoting direct partnerships between the University (Institute of Agronomy / Technical University of Lisbon) and the private sector in the agro-forestry, food, environmental, and biotech areas. INOVISA offers two complementary levels of activities:

- *Entrepreneurship and Enterprise Development:* As a university campus integrated unit, INOVISA is committed to putting together abilities with the aim of creating start-ups and spin-offs based on high potential innovative processes or technologies. These activities include a space for the incubation of new technology-based firms.
- *Innovation and Technology Transfer:* INOVISA works as a platform to enhance synergies between the University and companies for the development of R&D joint venture projects that involve knowledge and technology transfer. INOVISA also promotes technology valorization of university R&D projects, in order to optimize the Institute of Agronomy's performance as a technology lead developer in its areas.

Regarding technology transfer processes, INOVISA is involved in establishing several university-enterprise partnerships, namely in the QREN I&DT Program. In 2009, INOVISA has launched an initiative in the AGROTEC exhibition (national exhibition of the Agro-forestry sector), promoting the most promising technologies of all Agriculture Schools of Portugal. INOVISA is also a partner of OTIC/UTL (the TTO of the Technical University of Lisbon) since the very beginning. The TTO is coordinated by Isabel Alte da Veiga.

AvePark

Science and Technology Park
Carlos Remísio

Situated 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 four buildings: (1) The incubator of the University of Minho called Spinpark, (2) the building of the European Institute of Tissue Engineering and Regenerative Medicine, (3) the CRH building, and (4) the core building of Avepark. 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.



Spinpark

Incubadora de Base Tecnológica

Universidade do Minho

Avelino Pinto

Spinpark is the flagship of the University of Minho concerning entrepreneurship support and development. It is a 3,000 m² technology incubator that anchors research, industrial services, and activities which outflow from academia. Perfectly integrated in a 320-acre science and technology park, Spinpark is surrounded by a green environment and secure premises. Close to the university campus, R&D centers, historical hubs, an international airport, golf courses and sport facilities Spinpark is the right place for outstanding entrepreneurs with projects of excellence, an ideal platform to launch global ventures.

Spinpark's mission is in close coordination with the University of Minho knowledge chain and contributes to indigenous development, community prosperity and commercialization of science and technology. It provides physical infrastructures, management services, networking, access to venture capital and business angels, training, and internationalization support as well as shared labs in industrial biotechnology.

Spinpark targets academic spin-offs and technology based firms as it pursues the overall goal to accelerate business growth and survival.

Main associates include the University of Minho, The science and technology park Avepark, the Association of the Oporto Science and Technology Parks, the Guimaraes Municipality and the Guimaraes Chamber of Industry and Commerce. Spinpark began operating at the end of 2008 and presently hosts companies focused on a large spectrum of activities including new materials, aeronautics, biotechnology, environment, electronics, health, functional textiles, multimedia and software development.

Parkurbis

Science and Technology Park of Covilhã

Daniela Marta

Parkurbis, the Science and Technology Park of Covilhã promotes the development of new technology-based activities and fosters a dynamic exchange between the University of Beira Interior (UBI) and local business companies, thus helping the R&D supply meet the demands of Parkurbis-based businesses. Parkurbis 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; 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, namely venture capital societies and a contact network that includes banks and business angels with an interest in supporting projects and companies based at Parkurbis.

Besides this contact network, as the major shareholder of Parkurbis, Covilhã Municipality offers a package of incentives for setting up new companies in the region, and at Parkurbis in particular. Additionally, companies that choose to set up their businesses at Parkurbis will benefit from a five percent reduction in corporate income tax and from increases in financing obtained through applications to EU programs.

Sines Tecnopólo

Roberto de Souza

Sines Tecnopólo is a new Portuguese Science Park, located in the South Region, in the city of Sines. Founded in 2007, it was formed by two public universities: the University of Algarve (www.ualg.pt) and the University of Evora (www.uevora.pt); two public tech faculties: Polytechnic of Beja (www.ipbeja.pt) and Polytechnic of Setubal (www.pis.pt), with the local authority support of the Sines City Council (www.sines.pt).

The project targets tech transfer, entrepreneurship promotion and advanced training oriented to industry needs. Its location provides strategic management orientation for opportunities in both ocean economy and energy technologies. It has pursued several European 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

We are proud to be the first Tecnopole with a quality management team oriented toward its clients 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. Roberto de Souza is managing director.

CPIN-BIC

Centro Promotor de Inovação e Negócios

Maria José Francisco

CPIN is a Business Innovation Center certified by the European Union for innovation and business development. It is a non-profit, private association founded in 1992, with premises at Avenida Manuel da maia 36 c/v D. in Lisbon.

CPIN is one of seven Portuguese Business Innovation Centers and one of 163 EU BICs. The main goal is to provide integrated solutions to technology-based entrepreneurship through the adoption of new technologies and innovation for existing and new companies. CPIN is also an active partner in internationalization, facilitating access to new markets through networking with counterparts in Europe.

CPIN provides services to technology-based entrepreneurs by supporting development of company projects (incubation support services), development of European projects to support company internationalization initiatives, and diffusion of entrepreneurship and technological innovation. Technology transfer activities include technology brokerage with Portuguese and European companies, development of business planning tools, entrepreneurial skills assessments, and help with financing negotiations. The technology transfer team includes Antonio Nunes, Maria José Francisco, and Rita Mendonça.

CPIN provides incubation support such as technology analysis and evaluation, technology management; entrepreneurship promotion; promotion of technology transfer processes; and partnerships with universities and R&D centers.



The IC² Institute at The University of Texas at Austin has extensive regional and international networks to provide UTEN a rich base of talent that extends across the academic, business, and government sectors.

8.2 The UT Austin Network

The International Collaboratory for Emerging Technologies (CoLab) was launched on March 2, 2007 as a five-year cooperative program between The University of Texas at Austin and the Portuguese Science and Technology Foundation (FCT), including select Portuguese universities, technology parks, and businesses nationwide. IC² Institute and The University of Texas at Austin highly value this five-year collaboration with the FCT and the government of Portugal.

CoLab's main academic objective is to enhance globally competitive excellence in research and graduate education through mutually beneficial partnerships in Digital Media, Advanced Computing, and Mathematics. In addition, CoLab's University Technology Enterprise Network (UTEN) is based at UT Austin in the IC² (Innovation, Creativity, Capital) Institute.

UTEN provides IC² Institute and Texas-based partners with exciting and important opportunities to work with leading Portuguese academic, business, and government sectors to help build within Portugal a knowledgeable, globally competitive, and sustainable S&T transfer and commercialization network of highly trained professionals.

IC² Institute: Innovation, Creativity, Capital

The IC² Institute (www.ic2.utexas.edu) 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 the solving of unstructured problems related to market economies with a focus on accelerated technology-based growth in globally networked economies. 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 economies.

The IC² Institute has over thirty years of experience in researching, working and partnering on S&T commercialization and regional development projects in globally networked technology sectors. A key resource of the Institute is the IC² 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. The Fellows contribute their intellectual and practical expertise to Institute education and training programs, research activities, conferences and workshops, and mentoring.



Isaac Barchas, Co-director of UTEN Austin, addresses UTEN interns on the subject of business incubation within the context of the university.

Several IC² initiatives and programs have established leading national and international reputations and these programs and activities have partnered with Portuguese technology transfer managers and staff, technology entrepreneurs, and select civic, academic, and business leaders. UTEN's Portuguese partners are actively engaged in UTEN sponsored workshops, training, mentoring and Internship activities with the objective of building a globally competitive and sustainable science and technology commercialization infrastructure within Portugal. Following are IC² Institute and Texas-based organizations that contribute to this important objective:

The Austin Technology Incubator (ATI)

Launched in 1989, the Austin Technology Incubator (www.ati.utexas.edu) 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 and to accelerate their transition from early stage ventures to successful globally-competitive technology businesses. For example, in 1993 ATI established incubator programs with NASA at Ames Research Center in Sunnyvale, CA and Johnson

Space Center in Houston, TX followed by the National Oceanic and Atmospheric Administration (NOAA), Charleston, South Carolina, in 1995. 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 US Technology Transfer Society and an ATI' company (Evolutionary Technologies International/ETI) was named NBIA incubator graduate of the year. Across its history ATI has hosted and worked with over 150 teams of entrepreneurs, who collectively have raised over \$725 million dollars in investor capital while at ATI. Currently ATI focuses its incubation efforts in the following technology sectors: IT and Wireless, Bioscience, and Clean Energy.

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. With 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 US incubation and launch of the well-known Portuguese start-up venture, Critical Software.



Pedro Pereira and Rui Oliveira, managers with WIT software, attended the 2008 IC² Institute's Master of Science in Technology Commercialization program. Graduating with the class of May 2009, Marco Bravo (facing page), received the Kozmetsky Scholar and 2009 Outstanding Student awards.

“Attending the MSTC opened new entrepreneurial and technology commercialization horizons for us. Online, we had the opportunity to stay in constant contact with different business cultures by interacting with managers from the US, Taiwan, Japan, and China.”

– Rui Oliveira, WIT Software Manager and MSTC Graduate 2008

Mexico's Technology Business Accelerator (TechBA) – Lessons Learned for Portugal

TechBA Austin began operations in the Austin Technology Incubator in December 2005, with the objective of taking innovative Mexican-developed technologies and businesses to the US market. Teams of business development experts from IC² Institute work in coordination with TechBA's management team to support the Mexican companies in US business development.

Valuable lessons have been learned for the UTEN Program. For example, with the assistance of TechBA and IC² 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 US market.

Texas' Emerging Technology Fund was created as a tool to develop and diversify the Texas economy by expediting innovation and commercialization of research. UTEN Austin is actively working with select Portuguese companies to possibly benefit from the ETF.

Master of Science in Technology Commercialization (MSTC)

IC² Institute's elite online and class-based, one-year, executive degree prepares students to be successful technology transfer managers, intrapreneurs, and entrepreneurs. Students learn to identify and evaluate emerging technologies, identify customers and marketing strategies, develop broad, flexible business plans, build





Kate Mackie, an award-winning member of the IC² Institute MSTC faculty, provides an overview of technology-based marketing for global markets.

high-functioning management teams to drive a new venture, devise approaches for securing funding, and manage and protect intellectual property. Students work on virtual and international S&T commercialization teams to produce year-end S&T business and marketing plans for international markets.

Austin and Texas

www.austin-chamber.org www.cityofaustin.org
www.TexasWideOpenForBusiness.com

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 US 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 US city partner for Portugal's University Technology Based 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 educate, attract, and retain key US and international talent. This talent has been crucial to the establishment of globally competitive clusters in semiconductors, software and IT, and computers and peripherals as well as emerging clusters in biosciences, nanotechnology, digital media, clean energy and wireless technology.

The University of Texas at Austin

www.utexas.edu

The University of Texas at Austin was founded in 1883 and enrolls about 50,000 students from all 50 US states and more than 100 foreign countries, making it one of the largest universities in the world with a yearly operating budget of \$2 Billion. UT Austin, a major research university, has 16 colleges and schools with 2,500 faculty and annual sponsored research funding of over \$500 million. The *US News & World Report* annual survey ranks UT Austin among the top 15 public universities in the US. The National Research Council's latest survey ranked seven UT Austin doctoral programs in the top ten nationally. The *Times of London* ranked UT Austin second among US public universities and 15th overall in its ranking of the world's top 200 universities. From teaching and research to public service, the university's activities support 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.

UT Austin's Office of Technology Commercialization (OTC)

www.otc.utexas.edu

UT Austin's OTC bridges between the research community at The University of Texas at Austin and national and international commercialization partners with the objective of ensuring an efficient and effective transfer of intellectual property created at the University. The OTC



Rick Friedman, Associate Director of UT Austin's OTC, presents his perspectives on technology licensing and start-ups from UT Austin.

serves three distinct groups: the research community at the University, commercial partners, and society. UT Austin's OTC managers and staff are actively engaged in training and mentoring Portuguese 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 is working to link Portuguese-based business plan competitions to Moot Corp and Idea2Product (I2P) competitions to facilitate multinational competitions and global market considerations.

UT Austin Moot Corp

www.mootcorp.org

In 2009 UT Austin's McCombs School Moot Corp, one of the world's first business plan competitions, marked its 25th anniversary. Since its inception, more than \$1 million has been awarded to innovative new ventures, and included nearly 1,500 students from 16 countries have participated. UT Austin Moot Corp has been featured in the *Wall Street Journal* and *USA Today*; *Business Week* dubbed Moot Corp the "Super Bowl of World Business-Plan Competitions." Moot Corp competitors craft and refine business plans conducting extensive research on markets, licensing, patents and legal concerns. Four of the last five teams

that won the Texas Moot Corp have received funding and successfully launched their businesses.

Idea-to-Product (I2P) College of Engineering

www.ideatoproduct.org

The Idea-to-Product™ (I2P) competition encourages engineering students and researchers to create successful commercial ventures from university-developed ideas and technologies. Each spring I2P sponsors a campus-wide contest at The University of Texas at Austin encouraging students from a variety of academic disciplines to mine the campus for commercially viable ideas. An international contest takes place each fall that attract students and researchers from around the world. The spring 2009 event offered \$8,500 in prizes, with \$5,000 going to the first-place team. Win or lose, participants gain feedback from potential investors, develop skills needed to take their ideas to global markets, and make contacts within the venture capital community.

Select Additional Texas Partners Associated with and Supporting UTEN

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 a broad range of Portuguese TTOs



Robert Robb, Associate Vice President for Technology Commercialization at the UT Dallas provided an overview of IP and TT in the Dallas-Fort Worth metroplex.

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. UTEN continually adapts to the realities of UTEN Portugal's collaborators to facilitate market-oriented and creative long term, mutually beneficial relationships. The results include US business strategy; team development; marketing and networking opportunities; access to internship and management training programs and recruitment; referrals to a broad range of financial resources such as angel networking, guidance to venture capitalists, and assistance with small business grant applications.

Office of Technology Commercialization, University of Texas at Dallas

www.utdallas.edu

Housed in the heart of the Texas Telecom Corridor, the University of Texas at Dallas' OTC was created in April 2008 with a venture-experienced team and customer-oriented philosophy to move commercially viable inventions more effectively from the lab to the market. The OTC streamlined its invention disclosure and evaluation processes and - because of its internal capabilities and its seamless

collaboration with UTD's Institute for Innovation and Entrepreneurship (IIE) - focuses on creating and incubating UTD-affiliated startups (<http://innovation.utdallas.edu>). An industry-friendly mindset and a determined focus on "getting to yes" quickly are attitudes designed to expedite licensing, form industry-UTD alliances, and facilitate startups. A primary objective is to establish long-term, mutually beneficial relationships with inventors, industry partners and investors. The mission of the OTC is to effectively and efficiently facilitate the evaluation, 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.

Office of Technology Commercialization, Texas A&M University

<http://otc.tamu.edu/index.jsp>

The mission of the OTC at Texas A&M university is to encourage broad practical application of Texas A&M System research for public benefit; to encourage and assist those associated with the System in the protection, licensing and commercialization of their discoveries; to ensure the equitable distribution of royalties and other monetary benefits resulting from the commercial application of intellectual property; and to see that commercialization activities benefit the research,



Brett Cornwell, Director of Commercialization Services at the OTC at Texas A&M University, describes the technology transfer opportunities and challenges that occur in regions with agriculturally-based economies.

education and outreach missions of the System into the future. Founded in 1992, The OTC at the Texas A&M System 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. With nearly 27,000 faculty and staff, the A&M System has a physical presence in 250 of the state's 254 counties and a programmatic presence in every Texas county. In 2008, externally funded research brought in almost \$676 million to the state's economy.

Office of Technology Commercialization, South Texas Technology Management (STTM), San Antonio

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 portfolio, thereby achieving maximum economic and humanitarian value for the institutions, staff, and communities.

STTM's office is organized and staffed to handle effectively the multiple demands of a full-service office dedicated to stimulating growth in the quality and size of the intellectual property portfolio of the University, fully capitalize on the financial potential of opportunities through an energetic, entrepreneurial spirit and high level of performance, and accelerate the movement of technologies to the marketplace. Through value creation activities such as marketing, licensing, new company start-ups, financial valuations, business alliances, internal and external investment in technology development, while dealing with highly specialized contract issues regarding sponsored research, collaborations, Bay-Dole compliance, patent prosecution, materials transfer, conflicts of interest, confidentiality, and internal controls, plus invention-stimulating efforts in faculty education and other awareness-creating activities.



Left, Sean Thompson and John Fritz, Technology Licensing Associates at OTC/STTM discuss case management. Right, Ken Porter, Vice President for Technology Transfer, and Director at the STTM provides insight on value chain analysis and how to guide inventors through the technology transfer process. On the facing page, IC² Institute Director John Sibley Butler visits with UTEN interns.

University of Texas at San Antonio -CITE

www.utsa.edu

The Center for Innovation and Technology Entrepreneurship (CITE) is a joint venture between the Colleges of Business and Engineering at The University of Texas at San Antonio (UTSA). CITE serves students, faculty, and business entities through a process that helps establish a pipeline of technology entrepreneurs and is focused on accelerating the growth of new technology-based ventures. CITE is focused on four cornerstones of successful technology ventures: education, experience, resources, and support. CITE spearheads the study of entrepreneurship and entrepreneurial education and plans to cooperate with Portuguese researchers in exploring international comparisons. This intercollegiate effort between the Colleges of Business, Engineering, and Education studies the effects of entrepreneurial pedagogy and curriculum in a scientific manner in order to improve the quality of education and accelerate success of technology entrepreneurs.

INCELL and TEKSA, San Antonio

www.incell.com

INCELL Corporation, LLC is a products manufacturer and contract services biopharmaceutical 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 to bring high quality products and services to those who need them. TEKSA's Mission is to catalyze the commercialization and growth of biosciences and other technology-based startup and spin-off companies, facilitate technology transfer from academia and government research laboratories, and enhance economic development by creating jobs and new ventures.

TEKSA assists start-up and business development of TEKSA Portfolio Companies in the medical, biosciences, engineering, agricultural, environmental, and convergent technology sectors. In addition to providing Portfolio Companies with business support, expert business and technical advisory teams, access to networks, and use of facilities, Portfolio Companies gain access to IBM a preferred provider of information technology and services for TEKSA and TEKSA Portfolio Companies.



“UTEN is a powerful tool for all International Partnership programs launched and sponsored by FCT, as it will help training the right people in technology transfer activities, as well as creating strong links with the Technology Transfer Offices of our international partners, making sure they will be prepared to commercialize the results of research projects in development.”

– Vasco Varela, Executive Director for International Partnerships,
Fundação para a Ciência e a Tecnologia, FCT

8.3 Brief overview of international partners with the FCT

UT Austin | Portugal

The University of Texas at Austin
Austin, Texas, United States of America

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 \$450 Million. The *US News & World Report* annual survey ranks UT Austin among the top 15 public universities; the US National Research Council's latest survey ranked seven UT Austin doctoral programs in the top ten nationally. The *Times of London* ranked UT Austin second among US public universities and fifteenth overall in its ranking of the world's top 200 universities. 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 International Collaboratory for Emerging Technologies (CoLab) was launched by the Portuguese Science and Technology Foundation (FCT) on March 22, 2006 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. CoLab is based on collaborative partnerships between The University of Texas at Austin and select universities and laboratories in Portugal. 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 the following three academic programs: digital media, advanced computing, 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 past the planned five years of CoLab. For more information, visit www.utaustinportugal.org.

MIT | Portugal

Massachusetts Institute of Technology CoLab
Boston, Massachusetts, United States of America

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 21st 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 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

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 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. Successful graduates are conferred degrees from Carnegie Mellon and the partner Portuguese institution. For more information, view our programs pages.

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-Gesellschaft
Munich, Germany

The Fraunhofer-Gesellschaft undertakes applied research of direct utility to private and public enterprise and of wide benefit to society. Our customers include industry, the service sector, and public administration.

Fraunhofer-Gesellschaft encompasses more than 80 research units, including 57 Fraunhofer Institutes at 40 different locations in Germany. The majority of the 15,000 staff are qualified scientists and engineers. The annual research budget totals € 1.4 billion. Of this sum, more than 1 billion euros is generated through contract research. Two-thirds of the research revenue is derived from contracts with industry and from publicly financed research projects. Only 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. 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.



UT Austin | Portugal International Collaboratory for Emerging Technologies (CoLab) is represented here by: Keshav Pingali, Chair in Distributed & Grid Computing, Robert Peterson, Associate VP for Research; Sharon Strover, Chair of Radio-Television-Film Department; David Gibson, IC² Institute Associate Director; Manuel Heitor, Portuguese Secretary of State for Science, Technology and Higher Education; Juan Sanchez, Vice President for Research; and Ana Boa-Ventura, Digital Media Graduate Research Assistant.

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UTEN Portugal


University Technology Enterprise Network

UTEN is an initiative that has been developed under the FCT's International Partnerships Program with the IC² Institute and the following programs

UT Austin | Portugal
INTERNATIONAL COLLABORATORY FOR EMERGING TECHNOLOGIES, CoLAB

MIT Portugal

Information and Communication Technologies Institute
Carnegie Mellon | PORTUGAL
AN INTERNATIONAL PARTNERSHIP

Fraunhofer 

Portugal