



Working Package 1

Mapping 3M activities in partner universities

Deliverable 1.1

Good practices of 3M in Technical University of Valencia

Final report

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**U3M-AL PROJECT - DEVELOPING THIRD MISSION ACTIVITIES IN
ALBANIAN UNIVERSITIES**

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1 INTRODUCTION

1.1 Short profile university (type of university, size, special features)

The Technical University of Valencia (UPV) was created as a higher education institution in 1968 and is currently one of the four technical universities in Spain, specialised in engineering, architecture and management. Throughout its 44-year history, the UPV has incorporated a series of previously existent and independent technical schools, including for instance the old School of Industrial Engineering, which dates back from a century ago. Currently, the UPV is composed of 12 engineering schools and three faculties. Within these, 44 departments and 38 research centres and institutes are based with 36.000 enrolled students in study programs leading to 58 undergraduate and graduate degrees. In addition, the university's Continuing Education Centre offered 1.400 courses to 82.000 students, having the largest offer of life-long education in the Spanish University system. In the same year, the university employed 2.800 teaching and research and 2.400 administrative and services staff. The UPV budget is €260 million.

The UPV's governance structure is led by the rector and supported individually by 12 vice-rectors, four delegated directors, the head of management and the general secretary. Also, there are four collegiate bodies. The University's Social Council supervises the economic and financial activities as well as the institutional relation with its environment. The Government Council establishes the strategic and programmatic lines of action of the UPV, while the University Senate composed by the top directors and 300 university members (including academic and administrative staff and students) elaborates the institutional statutes and other functions attributed by the Universities Law (LOU). Finally, the Advisory Assembly, composed by selected members of the Government Council, develops reports and raises proposals in academic affairs. Interestingly, policies and actions taken in relation to UEP widely cross the institutional governance structure as presented along the report.

As a technical university, R&D&I activities are a core aspect at the UPV. These are increasingly encouraged at the UPV as part of its vision of being a "dynamic and innovative institution... excellent in training professionals and research and keeping strong linkages with the social environment in which it develops its activities". R&D&I activities represented an income of €54 million. A third of this income corresponds to competitive research, i.e. subsidised projects, evaluated and selected externally. The contracted R&D which represents more than half of this income is projects developed by demand of public and private enterprises.

Interestingly, when analysing the R&D&I income by the legal status of the funding entity, enterprises are the most important source funding €14 million, a

35% of the total income. The second major funding source is the Spanish Central Administration contributing a 30% of the total, followed by the regional and European Administrations with 12% and 9%, respectively. When analysing competitive research funding, the National Plan for R&D&I and the European Framework Programmes are the main sources representing a 60% and 22% respectively. It is worth to notice the considerable increase of both of these sources during the last six years, of 220% and 50%, respectively. When analysing the sources of the almost €23 million contracted R&D income, enterprises clearly outstand financing almost 60% of this type of activity. This shows the important role that enterprises play in funding research oriented activities in the university; however when analysing its proportion in relation to the overall UEP budget, this contribution reaches 3,4%, figure which probably has a considerable potential growth and will probably increase with the policies recently developed at the university.

When assessing the type of entities with which the university has collaborated in this type of activities, enterprises represented around 60% of the total and more than 1.300 enterprises working with the university. One third of these are from the Valencian Region, stressing the strong local scope of action.

1.2 Regional context

The UPV is based in the Region of Valencia, one of the 17 Spanish autonomous communities. The region is located in the east coast of Spain and has a population of almost five million inhabitants. Its capital city, Valencia, is the third most populated city in Spain and the 15th of the EU with over 1,7 million inhabitants in its metropolitan area. The regional economy is becoming service- based, tourism playing an increasingly predominant role. The region has an average production at the national level, representing a 10,9% of the population and producing 10,5% of the national GDP and a 12% of the country's exports. The typical Valencian economic model is based on SMEs, mainly family ones, having 99% of all businesses in the region less than 50 employees. However, some multinationals are present as well, such as Ford, which has long-standing partnerships with the UPV.

The UPV is one of the five public universities in the region and the largest together with the University of Valencia, a comprehensive traditional university with all type of programmes except Engineering. There is collaboration with the regional universities in some specific aspects; for example, through the Network of Valencian Universities for the Promotion of Research, Development and Innovation.

In this Region, Catalan language (commonly named as Valencian in the region) is co-official language and broadly spoken. The UPV gives importance to its

regional language by incorporating it in staff and students' policies. Also, some undergraduate courses are offered in Spanish and Valencian.

1.3 Changes in the role of universities in the context of regional economy and change of the UEP role

In the Region of Valencia and specifically at the UPV, it is observed a considerable level of interaction between the university and the regional economy. This is reflected in the university engagement with local enterprises and their associations, in the vast offer of further training to the local community, in the open cultural activities organised by the university and in the research collaborations with regional partners. The evolution of the university's regional role is mostly observed in its increasing interaction with regional SMEs in training and research- oriented joint activities. As it is discussed later in the report, in the last decade, this collaboration has increased considerably, manifesting in a variety of ways.

The university counterparts are not only individual enterprises but their associations. There are a number of local enterprises' associations with whom the university collaborates: Association of Valencian Innovative Enterprises (Avant), Institute of Valencian Small and Medium Industry (IMPIVA) and the Valencian Enterprises Confederation (CEV). Collaboration with these associations is generally long-term and sometimes large in scope. For example, the UPV science park is managed jointly with CEV.

2 INSTITUTIONAL PERSPECTIVE TO U3M ACTIVITIES

The UPV has a clear institutional structure to support different types and stages of 3M activities, combined with a rather implicit set of incentives to academics for developing activities with the environment. There are six main bodies supporting specific activities related to university- enterprises linkages:

- Life- Long Learning Centre
- Centre for the Support to Innovation, Research and Technology Transfer
- Institute for the Creation and Development of Enterprises (IDEAS)
- Integrated Employment Service (service for graduates' recruitment)
- City of Innovation (science park)
- Business Circle

This structure is aimed to fulfil the major needs and tackle the main opportunities of an innovative university in developing partnerships with enterprises through offering support resources and infrastructure resources. Regarding initiatives related to teaching activities, the Life-Long Learning Centre offers a wide range of training courses to university students, but mainly to companies requiring specific training. Additionally, the Integrated Employment Service works closely with enterprises, aiming to increase graduates' employability. In relation to research related partnerships, there is a range of services including support in the generation of spin-off companies, administrative advice in technology transfer and research projects' management, and physical facilities to host different types of research and innovation-oriented initiatives.

These five entities work separately, although currently they have separate functions, they develop joint initiatives and cooperation in specific aspects. Notably, together with the science park they form part of the Enterprise Circle, an institutional initiative to strengthen linkages and create new ones between the university and its enterprise partners. Moreover, in terms of research guidelines, the university's committee for R&D&I defines research policies, assesses them and allocates the main institutional resources for R&D&I. Overall, the strategy observed at the UPV to foster 3M is one in which: 1. The institutional support is offered through separate efficient entities with clearly defined functions but with moderate coordination between them; 2. The legal framework dealing with contracts, intellectual property and overheads issues is relatively beneficial for academics; 3. The direct initiatives to relate with enterprises are increasing in variety and investment; and 4. There is a strong impulse to, via public events such as conferences and courses and internal and external marketing strategies, strengthen, as its vision states, the idea of the UPV as an "entrepreneur and innovative university which practices effective mechanisms of scientific and technological dissemination".

a. Life- Long Learning Centre

The Life- Long Learning Centre (*Centro de Formación Permanente, CFP*) was created in 1991 driven by the university's Social Council with the aim of "serving as interface between the university and its environment in terms of life-long learning". It generates around €8 million of income to the university by offering over 1.400 courses to 82.000 students. Out of CFP's clients, 8% are UPV students while the majority are external individuals seeking training opportunities as well as enterprises interested in enhancing their employees' preparation.

The fees charged by the CFP cover the full cost of courses and they are considerably higher than those charged by the UPV for the regular undergraduate and graduate programs. While the yearly cost of a program at the CFP can reach €6000, fees for a regular undergraduate program at the UPV vary between €565 and €801 per year.

The CFP offers three types degrees: Master (over 500 hours; 45 programmes), University Specialist (over 200 hours; 45 programmes) and Professional Specialist (over 400 hours; 16 programmes). These courses are promoted by UPV's schools, institutes or departments and developed by the CFP. This is especially relevant in the case of Master programmes which may be confused with the recently legally established Master programs compatible with the European Higher Education Area. Regarding short specialisation courses, they are developed as a response to specific demands observed by the CFP's director and technicians. Finally, demand- driven courses are designed as a response to specific requirements presented by an enterprise to train its employees.

The CFP uses since 2001 the European Foundation for Quality Management (EFQM) model as a management tool, which has as a key element the involvement with clients and partners. In this aspect, the CFP has an approach towards the design of its activities in which the external clients (students, enterprises), as well as the internal ones (university governing staff, coordinators, administrative staff) are key determinants. This is reflected for instance, in the CFP's action to develop partnerships with enterprises which is done mainly by maintaining good relationships with UPV alumni which may have managerial positions in the region's SMEs, important group of clients of the CFP. In addition, the EFQM strongly considers the external environment, including national and international networks of life- long learning centres, other centres dependent or not of universities, and other enterprises and institutions.

Hence, the CFP represents an important linking point between the university and the enterprises in its region due to the magnitude of its activities and its highly demand- oriented approach, represented not only in the courses' design, but also in its managerial approach. Besides the income figures, an indicator of the university's central administration satisfaction with the CFP's outputs, is the relatively high degree of autonomy that the centre has obtained.

b. Centre for the Support to Innovation, Research and Technology Transfer

The Centre for the Support to Innovation, Research and Technology Transfer (CTT) is the entity in charge of administrating the knowledge creation activities and collaboration projects supporting UPV's researchers in their interrelation

with their enterprise environment and participation in I&D&I programs. Specifically, the CTT offers the following services:

- Identification and dissemination of I&D&I programs, informing interested researchers on collaboration and funding opportunities.
- Management of subsidised activities, offering advice in proposals' preparation, economic justification of research projects and scholarships' administration.
- Management of I&D&I contracts, agreements and services provision, dealing with income and expenses' administrative procedures.
- Management of technological demand, being an interface available to organisations seeking technological partners and services.
- Register, protection, promotion and commercialisation of I&D&I results.
- Advice and support in the planning of scientific conferences.

In 2007, the CTT supported 3.914 activities managing €63 million, from two main types of sources: competitive R&D&I (45%) and contracts and agreements (55%). Out of the contracts and agreements category which includes other types of income too, a 44% corresponds to technological support, reflecting the strong institutional focus in this area. The same year, the university applied for 20 patents and 55 licenses were commercialised, representing €547.000 of income. These figures on commercialisation of research results seem moderate for a technical university; however knowledge transfer offices seem generally to have slow financial returns, so the increasing promotion of research activity in the university and the encouragement of the CTT to foster academics to commercialise their results, may lead to higher figures in the coming years.

Nevertheless, when observed the human resources distribution of the CTT it is clear the they are mainly dedicated to supporting the management of R&D contracts and agreements and competitive funds, rather than to promoting or supporting the commercialisation of research results. This scheme differs from other national and international knowledge transfer offices (KTO) which focus more their activity on the commercialisation of results than on managing external funding for research. Developing both tasks together, seems positive since there is one main counterpart for academics and for enterprises, however, it also seems that there is a tendency to focus on the first task, having considerable potential to exploit further the second task. Although at the UPV support structures for UEP have separate and clearly defined functions, in this case, these two functions are developed together with a stronger focus on the management of external funding.

c. Integrated Employment Service

The service for graduates' recruitment (SIE) develops a range of activities aiming basically to improve the UPV students and graduates' employability and their on-site training. Since its creation in 2000 the SIE acts as intermediary between enterprises and students to support the latter ones in getting internships and job placements giving special importance to postgraduates. This unit reports to the Delegate Directorate for Employment Policies and as the above mentioned structures, it also forms part of the UPV business circle initiative.

To fulfil this task the SIE develops employment fairs and workshops, provides students with guidance and training for employment, tracks the career and job placement of graduates through its Employment and Training Observatory and manages students' and enterprises' databases to connect them appropriately. Additionally, the SIE establishes relations and cooperation agreements with a significant and increasing number of companies and institutions, with which their internships' and job vacancies, the UPV contributes to enhance students' training and graduates' first job opportunities.

The SIE also collaborates directly with some private companies and public organizations in specific initiatives. The SIE also collaborates with the Valencian Service for Employment and Training (SERVEF), and the Valencia Business Confederation (CEV), among others. During 2005 a total of 8,495 practices in public and private entities were administered at the SIE for 5,909 students.

d. IDEAS Institute (business incubator)

The IDEAS Institute for the Creation and Development of Enterprises was established in 1992 being, as it promotes itself, the 'first programme to support university entrepreneurship in Spain'. The main aims of IDEAS are to develop the entrepreneurship culture and to support the creation and development of innovative, technology-base and spin-off enterprises in the Technical University of Valencia. To achieve its objective the Institute offers workshops for entrepreneurs for personal development, directive development and enterprise management. It also supports the development of business projects throughout its different stages, from the creation of business ideas by strengthening potential entrepreneurs' creativity, to offering IT support for the development of business plans, including advice when carrying out feasibility analyses and information on legal procedures. Although the Institute is not intended to be a source of funding for new enterprises, it does offer support in the search of funding sources and provides information on calls and awards for entrepreneurs.

Since its creation, IDEAS has supported the creation of over 400 enterprises. Interestingly, out of the enterprises created in 2006 with IDEAS support, only a

10% were spin-off's of the UPV, that is, enterprises initiated by UPV members based on research results obtained in the framework of the university's activities. Most of the enterprises are related to engineering services, many of them focused on renewable energies. However, there are some few non-technological oriented, for example, offering extra-programmatic activities for schools in Valencia.

IDEAS interacts with other external agents such as the Regional authority for enterprise, university and science (*Consellería de Empresa, Universidad y Ciencia*) and the Valencian Service for Employment and Training (*Servici Valencià d'Ocupació i Formació, SERVEF*) in promoting regional I&D and training programmes. During 2006, for example, IDEAS collaborated with the *Consellería* implementing the GESTA Programme to advise the UPV research staff in presenting proposals for the creation of spin-offs. 20 groups were advised and five enterprises promoted as a result. At national and European levels, IDEAS has collaborated with the former central Ministries for Science and Technology, and Education and Science and the European Commission, promoting the creation of technology-based enterprises, the National Plan for R&D&I and the European Research Area, respectively. The Institute also develops international conferences (CONIDEAS) to promote innovation and enterprise creation. These have taken place in Valencia, Mexico and Chile.

In addition, IDEAS Institute supports access to IT for innovative enterprises through 'Innova park' (Parque Innova). This incipient service, sponsored jointly by the Valencian Small and Medium Industry Institute (IMPIVA) targets spin-off's enterprises of the UPV and offers consultancy and training in new technologies. The idea is that Innova Park also serves as a meeting point between investors and young entrepreneurs.

e. City of Innovation (science park)

Since 2002, the UPV City of Innovation (*Ciudad Politécnica de la Innovación, CPI*) has been under construction at the main university campus. The 140.000 m² science park is currently in its last planned stage of edification, completing the space organised to host over 20 research institutes and enterprises and over 1.500 researchers. The CPI represents a major university policy which aims to be an instrument for the generation of knowledge and the transfer of knowledge for its capitalisation. It has a clearly defined local focus, aiming to "integrate and actively participate in the progress of society to which it belongs, putting all the scientific potential of the park at the service of research and business development of our environment". The UPV science park is the only one with these characteristics in the region of Valencia representing an advantage to work with the local enterprises. In fact, as explained by the CPI director, there is more demand from enterprises for space in the park than what it can offer.

The construction of the science park has been funded through competitive public funds and through the university's ordinary budget. The sources of external funding are: the European Regional Development Fund, the former Central Ministry for Education and Science and the regional government. The university's own funding has been partly available due to its policy that the majority of income generated through R&D activities is directed to R&D activities.

The CPI is currently managed by Innova Foundation, a non-profit entity of private right created in 2002 which is constituted in equal parts by the university and the Valencian Enterprise Confederation (CEV). Its Board of Trustees represents the park's government and administration body. It is chaired by the CEV's president and composed by 25 members who are representatives of the UPV and the CEV as well as by individual members appointed by both institutions. The Foundation's main objective is to "increase the technologic exchange between Valencian enterprises and the university, enhancing in this way, entrepreneurial competitiveness". Although this managerial structure was appropriate in the first phases of the Science Park, the University is presently analysing the possibility of changing it in order to have a more suitable organisation to support the current and future initiatives developed at the CPI. Possibly, the new structure would still have the form of a foundation but having a stronger university representation.

Even though the overall management of the park is run by Innova Foundation, the new initiatives at the CPI are led by the vice-rector for Economic Coordination and Planning. This facilitates the coordination with other institutional entities dealing with research, technology transfer and UEP. The approach taken by the Foundation is to strengthen, complement and coordinate the CPI's activities with those developed in the above described Centre for the Support to Innovation, Research and Technology Transfer, and Life- Long Learning, the Institute for the Creation and Development of Enterprises and the Integrated Employment Service. Also, by having an integral perspective of these structures, Innova Foundation aims to identify and solve any lack of services desirable to support R&D, innovation and knowledge transfer at the UPV in a comprehensive way. This is the case of physical space for business incubator, which was not available and is currently under construction. The coordination of the involved entities is being sought for example through the Business Circle initiative described later in this section.

The Innova Foundation's strategy in relation to UEP is two-fold. On one hand its interest is directed towards large companies with which the potential interaction is significant. From this, the focus has been set mainly on those already having substantial collaboration with the university, and in particular cases, with important multi- nationals. On the other hand, the focus is regional. Given its historical connection with local enterprises and their associations and their

potential collaboration with the CPI, the Foundation has set specific actions to enhance collaboration with local enterprises. In addition to targeting the collaboration with these types of enterprises, the focus is also put on five priority areas of research, namely industrial and energy technologies, ICTs, civil engineering, agro-food and biotechnology, and chemical processes and products. In principle, inter-disciplinary research is also fostered, however direct initiatives to accomplish this objective are less evident.

In order to put in action the Foundation's strategy, specific actions are taken in the park's space distribution and in its approach towards enterprises. These are developed by a 20-persons staff working at the Foundation. The science park area is distributed thematically mainly according to its priority areas. In addition to these, there are two buildings currently under construction, the first of which will serve as a business incubator for UPV's start-up's which require place for their administrative and desk activities. The second one will host the Centre of Entrepreneurial Development for Technological Innovation (CEDIT). This centre is planned to host enterprises innovation centres as well as technology based enterprises. Also in terms of space use, the idea is to host, of the large enterprises interested in being based at the park, mainly their corporative labs for R&D. These are the enterprises' divisions through which more interaction and benefit can be generated for both, enterprises and the university.

Regarding the approach that Innova Foundation is taking towards enterprises, there are three important elements: the incentives to collaborate with the university, specific strategic actions taken with large companies and the Business Circle. Firstly, the renting price for space at the park offered to enterprises is high according to the market's standards. However, the more and more intense the collaboration between the enterprises based at the park and the university is, the more the reductions in the renting costs. The types of interaction are broad ranging from employing university graduates to developing joint research projects. This creates a condition, incentive and selection criteria for enterprises with physical presence in the CPI. Secondly, the Foundation has invited international large companies to collaborate with the university having a place at the CPI. Currently there are two projects for large-scale collaboration with enterprises in sustainable development. Similarly, the CPI is activating two platforms for developing research in security and defence. In the third place, the Foundation coordinates the UPV Business Circle, probably the most important initiative in place to coordinate the different entities at the UPV dealing with knowledge transfer and UEP and also a relevant one in increasing and improving the contact points between the university and local enterprises.

f. Business Circle

The "*CPI Business Circle, UPV Club for Innovation*" is a customers' loyalty plan. Its aim is to maintain and increase the interaction mainly with enterprises which

are already customers and partners of the university. This, with the objectives of: 1. increasing the joint activities which allow knowledge and experience exchange; 2. working together to strengthen with effectiveness and coordination the Valencian Innovation System; and 3. advising companies to channel their innovation policies. This initiative is led by the vice-rector for Economic Coordination and Planning and developed jointly between Innova foundation and the CTT. Its main scope of action is regional enterprises which may collaborate with the university not only in research but also in teaching related activities. The university selects the best enterprise partners in terms of agreements and collaboration (over €24.000 during the two previous years) and invites them to form part of the Business Circle. Also, enterprises which have strategic potential for collaboration, UPV graduates' usual employers, UPV related start-ups, CEV direct members and members of the Association of Valencian Innovative Enterprises (AVANT I+E) are invited as well. Regarding UPV academics and researchers, those involved in contract or collaborative research during the two previous years and patent inventors are invited to participate. The *Club* is formed by the institutional entities dealing with UEP described previously in this report, and by the selected companies, their associations and UPV members. This structure is represented in the following figure.

Under the framework of the business circle a range of activities are developed and a variety of services offered exclusively to its partners. These include sectorial enterprises meetings, an e-bulletin and a *one-stop-shop* for enterprises partners seeking services at the UPV. Also, enterprises members of the Business Circle are entitled to receive an 18 hours free consultancy from the university. These activities are organised by 1,4 FTE staff provided by the CTT and Innova Foundation. The operational costs of the Business Circle are €20.000 per year which is funded through a grant of the former Ministry for Education and Science to the CTT and with institutional budget. Although these activities are relevant to enhancing the collaboration and partnerships between the university and its enterprises partners, it seems that more coordination between the institutional members of the Circle and further action may increase the impact of this integral initiative.

From a general perspective on the UPV's strategy and management of UEP, it is observed a well organised and clear structure to promote different types of UEP with effective supportive entities. These are officially coordinated, however in practice, some interaction is observed, but with less intensity and coordination than expected or desired to reach its full potential. In spite of a relatively low collaboration between the UEP related support entities, the UPV has managed as presented in the previous sections to strengthen and expand its relationships with enterprises, result which is also explained by the direct and indirect policies explained next, fostering academics to develop UEP.