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Mapping 3M activities in partner universities

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Good practices of 3M in EU universities

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

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1 INTRODUCTION

In the era of the knowledge economy, universities have been asked to transform themselves into key players within it and to contribute to the *Lisbon Agenda* (2000), aimed at turning the European economy into ‘the most dynamic knowledge-based economy in the world’. The Strategy 2020 of the EU ratified these objectives and reaffirmed the relevance of cooperation between universities and enterprises.

This relationship between higher education and society is generally considered as the third mission of universities. The term “third mission” encompasses a wide range of activities involving the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments (Tuunainen, 2005). Typically, third mission has been conceived as a set of functions that are held to be distinct from the teaching and research roles of higher education (Vorley and Nelles, 2008, Görason, Maharajh & Schmoch, 2009). Not surprisingly, the third mission is in general rather vaguely defined, often as a residual term in contrast to teaching and research. Paradoxically, the basic problem of analysing the third mission is that it entails a good deal of mission overlap. “When engagement is high on a university’s agenda, the challenge for those in charge of the university is to achieve a situation where community engagement is realised through the core activities of teaching and research and not have it regarded as a residual activity” (Jongbloed, Enders & Salerno, 2008: 313). Although there are many forms of higher education–business interaction, third mission activities are usually related to research (technology transfer and innovation), to teaching (lifelong learning/continuing education), or to social/cultural engagement in line with regional development goals. Additionally, this variety of activities comprises different types of actors, many constituent parts of universities and requires different structures and mechanisms for it to become a reality.

Due to their complex and mixed structure, 3M activities are difficult to identify and to track within universities. The main reasons for such limitations are based on two considerations: the dependence on contextual factors for the development of 3M (these factors occurring at national, regional, institutional, disciplinary, and also at individual levels), and the nature of the data needed to track these activities (which are sometimes unquantifiable, informal, and not available in central university units). Consequently, the management of 3M has to be explained in relation to the context, to national and regional policies, to institutional views on 3M and, in many cases, to individual initiatives by some entrepreneurs in universities: the latter often constitute the main explanation of the success in implementing 3M activities.

2 EUROPEAN POLICIES AIMED AT STIMULATING KNOWLEDGE TRANSFER ACTIVITIES

It has been claimed that one of the traditional problems of European universities has been they “lack an entrepreneurial spirit, are too academically oriented and do not make [the] relevance of their programmes to the needs of the labour market a sufficiently high priority” (ESMU 2006). This situation is rapidly changing due to the greater sense of urgency brought about by the new challenges of ageing populations, globalization, sustainable development and the rise of information and communication technologies.

Several documents have been produced by the EC (notably, EC 2003, 2005, 2006, 2007). The first was *The role of the universities in the Europe of knowledge* (European Commission, 2003). This document “seeks to start a debate on the role of Universities within the knowledge society and economy in Europe and on the conditions under which they will be able to effectively play that role”. The objective of this document was to provoke a debate on universities and Member States on the role of universities in developing the knowledge economy, something that previously was never clearly stated as a formal policy. In this sense this documents opened doors for further advances. This Communication stated that:

“The knowledge society depends for its growth on the production of new knowledge, its transmission through education and training, its dissemination through information and communication technologies, and on its use through new industrial processes or services. Universities are unique, in that they take part in all these processes, at their core, due to the key role they play in the three fields of research and exploitation of its results, thanks to industrial cooperation and spin-off; education and training, in particular training of researchers; and regional and local development, to which they can contribute significantly”.

This Communication also raised a series of questions: how to make universities contribute more effectively to local and regional needs and strategies; and how to establish closer co-operation between universities and enterprises to ensure better dissemination and exploitation of new knowledge in the economy and society at large.

The EC Communication, *Delivering on the modernisation agenda for universities: education, research and innovation* (European Commission, 2007) remarked on the “insufficient exploitation of the knowledge produced and insufficient linkage to the business community” and recommended that universities should:

“...establish stronger and sustainable partnerships with the business community through collaboration with industry on university-based research and technology initiatives; exploit knowledge by sharing it with the business community and society at large and better communicate the relevance of their

research activities and identify and implement models that allow co-funding of researchers' basic salary from other sources”.

This Communication also urged Member States to:

“Adapt, if necessary, their legal frameworks at national and regional levels to allow universities to diversify their funding sources, including in the domains of procurement policies; to use offset funds for research; to enjoy tax breaks for endowment funding; to encourage researchers to create university research spin-offs and to apply their research results and patents; and allow and support universities to develop incentive mechanisms for a better exploitation of knowledge and wider sharing of research results and activities with society and SMEs.”

In a Resolution on *Modernising universities for Europe's competitiveness in a global knowledge economy* adopted in 2007 (European Council, 2007), the main directions of the modernisation process were underlined. This Resolution:

“... invites Member States to...promote the contribution of higher education institutions to innovation, growth and employment, as well as to social and cultural life, by encouraging them to develop and reinforce partnerships with other parties, such as the private sector, research institutions, regional and local authorities and civil society”.

In 2009, a new Communication was devoted exclusively to university-business partnerships (EC, 2009). This document remarks on the need to reinforce new curricula for employability; to foster entrepreneurship, knowledge transfer, mobility across borders and between business and academia; to open-up universities for lifelong learning; and to improve university governance.

3 POLICIES FOR DEVELOPING KNOWLEDGE TRANSFER AT NATIONAL LEVEL

To some extent, all the countries have set up policies designed to promote knowledge transfer in recent decades. These policies are usually based on funding or co-funding as part of a more general policy of R&D&I, with funding either directed to universities, to enterprises (generally by tax incentives for collaborating with universities), or to both parties.

Other policies that have been implemented are related to intellectual property rights, in some countries complementing university regulations to incentivise academics to patent or to engage in commercial/innovation-based activities. Additionally, most countries have undertaken an extensive debate on their curricular reforms as a consequence of the construction of the European Higher Education Area. In this regard, concepts like employability and the importance of paying attention to the

professional relevance of their degrees have increasingly made employers to be considered by universities as more natural partners.

3.1 Funding research and innovation

Policies designed to promote university-enterprise partnerships based on funding and subsidising R&D&I differ in their focus and scope between countries, and also in the range of policy instruments used. Funding can be directed either to support the creation of clusters, or tax relief may be used to facilitate mobility between the university and the enterprise sectors, to create spin-offs, or other initiatives. In most countries, ministries playing a relevant role in the design of R&D&I policies are the Ministry of Education and Science (or equivalent) and the Ministry of Industry and/or Economic Affairs (or equivalent). Additionally, other ministries have a strong saying in specific policies on R&D&I, including the ministries dealing with health, environment, defence, etc. In general, most countries have inter-ministerial coordination units or specific councils on innovation in charge of supplying concrete policy recommendations (the Council for Innovation and Growth in Germany, the Innovation Platform in the Netherlands, the Interministerial Commission on Science and Technology in Spain, for example.).

In most countries, policies at regional level (and the link between the national and the regional level) are also relevant. This is especially the case in Germany and in Spain, but also is significant in Italy, the United Kingdom and the Netherlands. For example, in the case of Germany, policies at regional level are very important in the region of Hesse and Nordrhein-Westphalia, as shown in the case of Science4Life (a project with the University of Kassel) and the competition on Research on Energy in North Rhine Westphalia (a project with the University of Cologne).

The Netherlands has diverse and focused policy instruments. It is also a country where government started to pay attention to public-private partnerships relatively early, at the end of the 1970s. However, the diversity of policy instruments has raised a debate about the effectiveness of generic *versus* specific instruments. At a much later stage, in other countries such as Spain, the diversity of policy instruments implemented in the last years to promote public-private partnerships is increasing, though their effectiveness is under debate.

3.2 Fiscal incentives to enterprises

The promotion of fiscal incentives to enterprises at national level is present in several countries. Germany is one of the few countries without tax incentives for private R&D activities. On the other hand, fiscal incentives have been one of the measures adopted to promote technological transfer in countries like Spain, the Netherlands and the United Kingdom. In Spain, a recent tax reform has reduced the general corporate tax rate by 15% for all companies, in one year for SMEs (from 30 to 25% by 2007) and in two years for the rest of firms (from 35% to 32.5% by 2007 and to 30% by 2008). The reform has also introduced a new discount of 40% in the social

charges corresponding to R&D staff for the company that cannot be combined with the use of R&D tax credits on corporate taxes. Finally, the tax reform has established a progressive reduction (8% for 2007, and 15% for 2008) in the level of the R&D tax credit. The current system of R&D&I tax incentives will not be available until 1 January 2012. However, the central government envisages evaluating the relative effectiveness of the two alternatives R&D&I support measures (reduction in social charges for R&D staff versus R&D&I corporate tax credits) before the end of 2011 and will then decide which one is better adapted to the needs of Spanish firms.

In the Netherlands, the Private R&D tax credit (WSBO) is one of the most important instruments that encourage private R&D. The WSBO reduces wage tax and social security contributions for companies with employees and deducts a fixed amount from the profit for self employed persons. The total budget of WSBO will amount to €450m in 2007. Also in the United Kingdom, taxation rules have been changed to encourage greater private R&D investment.

3.3 Incentives to academics

Incentives to academics who promote university-enterprise partnerships focus on the possibility of getting external income from contracts with enterprises and on mobility programmes with enterprises, including the option of leaving the university for a period of time. There are important differences in both measures between countries. For example, in Spain academics have the right to participate in R&D contract activities since 1983; however, only since the Law of Universities introduced reforms in 2007 are academics enabled to participate in or to create firms.

In the Netherlands, academics can directly get additional income from contracts under strict supervision. Any contract that hires a university employee and increases their salary must be approved by the Dean. Compensation for active participation in 3M activities and for success in bringing in external funding is dealt with through regular university salary scales.

In Italy, it is generally unusual for academics to get additional income from contracts with enterprises. However, due to institutional autonomy some universities may adopt their own rules in this area. These allowances have to be approved by the department and faculty representative bodies.

As previously noted, in most countries there are specific policies to promote staff mobility between universities and enterprises. In Spain, the Programme Torres Quevedo integrates university and enterprises with the objective of getting 1,300 PhD holders hired each year from 2010 by the private sector. In the Netherlands, the Casimir programme has been established by the Dutch Research Council to foster mobility of researchers between public research organisations and the private sector and to make jobs in research more attractive by giving subsidies (up to €160,000 per contract) for projects having three partners - a company, a university and an individual researcher. In the United Kingdom, the Faraday Partnerships are aimed at

allowing mobility of specialist staff between universities and industrial firms, to support product and process development. Also the Royal Society Industry Fellowships promote greater interchange of staff between enterprises and universities.

However, in most countries mobility seems to be easier at the beginning of the academic career than at higher levels. For example, in Germany, frequent recruitment of practitioners to university professor positions is confined mainly to the areas of engineering, education and fine art, whereas there is hardly any mobility from professor positions to positions in enterprises.

3.4 Coherence between labour market and curricula

Probably encouraged by the curricular reforms that have been taking place in Europe as a consequence of the construction of the European Higher Education Area, the involvement of employers in the design of programmes is more and more considered by universities.

In binary systems of higher education, universities of applied sciences (*Fachhochschulen* in Germany and *Hogescholen* in the Netherlands) have traditionally had a strong applied curricular emphasis in contrast to universities. However, in framework of the Bologna Process, the contrasting aims of predominantly theory-oriented universities and applied-oriented higher education institutions have been blurred to some extent. In Germany, it is common practice for external representatives of the world of work to become members of review committees for individual study programmes, and also for academic staff to have been employed in industry; furthermore, students may work part-time in activities related to possible future work. Nowadays, upon completion of a bachelor degree, the same type of degree is conferred at universities and *Fachhochschulen*. Additionally, both universities and *Fachhochschulen* are entitled to provide predominantly theory-oriented and applied-oriented master's programmes, although unlike in universities, master's programmes at *Fachhochschulen* comprise one or two semesters of work experience.

In the Netherlands, universities of applied sciences have traditionally worked in close cooperation with industry. A policy of setting the lectorate position was created to build a so-called knowledge circle of professionals from within the *hogescholen* and the business sector (mainly SMEs) in order to stimulate the transfer of knowledge between *hogescholen* and SMEs. In the United Kingdom, current proposals are aimed at strengthening the role of employers in Further Education colleges (the vocational education sector).

4 MAPPING TYPES OF 3M ACTIVITIES IN EU UNIVERSITIES

European universities are extremely active in developing 3M activities. As third mission activities, most partnerships between universities and enterprises are related to or derived from teaching or research activities. However, in a number of cases, particularly in wide-ranging long-term partnerships, the activities that have been developed integrate teaching and research. In other cases, distinctions between the linkages with the first or second mission are less clear, for instance, in entrepreneurship-focused programmes, where training for commercial exploitation of research is offered. Also, some interactions between universities and enterprises are not directly related to research or teaching activities, but have another focus, such as cultural activities for the community or participation in governing boards of the partner institution. The main types of activities mapped in the institutional cases are these:

1. *Creating large-scale long-term projects for strategic joint research.* These include science and technology parks (e.g. Kennispark- Knowledge Park at the University of Twente), business incubators (e.g. Biopartner Center Maastricht in which the University of Maastricht participates, and Turku Science Park at Turku university), large scale research centres (e.g. the Centre for Research, Innovation, and Technology- CITIUS at the University of Seville), regional-level R&D infrastructure (e.g. Science City project in which the University of Warwick participates).
2. *Valorising research results in various forms including the creation of spin-offs and licensing protected research results.* At the University of Santiago de Compostela, the commercial exploitation of research results, in particular through the creation of spin-offs, is fostered through a comprehensive programme including funding, training, consultancy and networking instruments. A similar situation can be found in *Biocity* in Turku.
3. *Funding chair positions supporting both teaching and research activities.* At the University of Kassel endowed chair positions which promote research and teaching in special fields of interest are frequently developed. *Developing joint research between enterprises and university researchers.* A very common type of partnership which is receiving increasing public funding as a means to promote innovation. For example, in the Technological District in which the University of the Salento participates, this is a core activity *The Cittadella Politecnica (Polytechnic City)* at Politecnico di Torino endeavours to conceive a new role and a new strategy for the Politecnico on the regional territory and to provide spaces for productive and directional activities; at the same time, the project provides services for companies, universities and citizens, implemented by research and didactic activities.

4. *Contracting research.* A common practice in most universities; observed in diverse areas, notably in science and technology but also in other areas. At Poznan University of Economics (PUE), for example, in 2006 a “virtual museum” for the National Museum for Agriculture on the food and agriculture industry in Szreniawa (near Poznan) was created, with research done by PUE’s unit for computing.
5. *Renting of research equipment and facilities.* Enterprises may rent specialised equipment which is usually not economic for enterprises to acquire given its limited use. At some research institutes at the Valencia University of Technology this takes place. Usually this type of renting is included in broader research contracts.
6. *Lectorate positions.* In the Netherlands, universities of applied sciences (*hogescholen*) are not eligible for research funding from the government, but applied R&D has gained substantial importance since the appointment of “lectors”. To stimulate the transfer of knowledge further, the government has started a programme on knowledge circulation between *hogescholen* and companies, especially SMEs. Government subsidies have been made available to create around a hundred lector positions since the programme’s creation in 2001. The government pays for approximately 70% of the lector positions and the remaining costs are funded by industry or public sector organisations.
7. *Curricular development and course supply.* Collaboration between graduates’ employers and universities to design responsive study programs. For example, Dutch universities of applied sciences have set up a national structure to ensure the connection between their study programmes and the labour market’s demands. For each programme, at a national level a professional profile and professional qualifications are formulated.. Representatives from the world of work participate in field committees providing information on relevant trends in the profession in order to improve and update the content of the programmes.
8. *Further training to enterprises’ employees* Courses may be short and specific or long and more comprehensive, for instance in the form of master’s study. This training is offered through centralised institutes or by departments or academics to which enterprises request their services. For instance, the International Institute In Lifelong Learning (I³L³) at the Technical University of Darmstadt offers services for industry and individuals and consultation and support from the different departments and institutes of the University. I³L³ acts as an intermediary between enterprises inquiring about training programmes and the department or academic in charge. A similar situation can be found in Cambridge, where the *Institute of Continuing Education* is one of the six Schools of the University and offer this kind of training. On the other hand, at

Bocconi University, further training is offered directly by its School of Business Administration, which provides over four hundred one-day and short courses for executives and ten postgraduate specialisation courses.

9. *Organisation of internships for students in enterprises.* In some institutions and study programmes, internships and placements are mandatory for all students. This affects the need for and development of support structures to organise the internships and the intensity of the collaboration with employing organisations. For instance, at the Utrecht University of Applied Sciences, in full-time programmes, placements generally constitute one-quarter of a student's study, while in cooperative education programmes, approximately half of the programme will consist of paid work in the world of work. In these cases, a tripartite agreement is entered into between the employer, the student and the university, to the effect that the student will perform assignments required by the programme within the company.
10. *Graduates' recruitment services which include facilities for students and enterprises* including: electronic portals and fairs for matching enterprises and students, graduate databases and careers advice for students. For example, the Polytechnic of Turin through its 'Stage & Job supplies' offers a variety of campus recruiting services consisting of business presentations, recruiting days, business games, careers fairs, face to face interviews, CV days or company workshops.
11. *Developing the entrepreneurial culture.* Mostly this is aimed at fostering the creation of spin-offs in the short term, but there are also attempts to promote a cultural change within students to develop more entrepreneurial cultures in the long term. These activities are mostly organised by the university and in many cases have support from governmental funding. It is a research- and teaching-related activity since it mainly fosters the commercialisation of research results by training students, researchers and academics on entrepreneurship issues. A specific example in this field is offered by *The Cambridge Programme for Sustainability Leadership* offering education to worldwide local leaders in environmental sustainability.
12. *Cultural, social and sports activities* which are funded and developed jointly by enterprises and universities. Some examples are: shared financing and use of sports facilities at Warwick University; shared financing and promotion of concerts at the Valencia University of Technology and at the Dublin Institute of Technology. *Supply of services not related to -research or teaching to enterprises.* Some universities are active in offering diverse services to the community, including enterprises. This includes consultancy, retailing, for example. The University of Warwick stands out in this regard, obtaining almost a third of its income in this way. *The Cambridge Public Engagement Programme* which coordinates major events, gives practical support, manages

community contacts and provides advice to nurture charitable, educational and voluntary partnerships between the University and its communities (*Cambridge Festival of Ideas and Cambridge Science Festival*). *The Community Links Programme* started by Dublin Institute of Technology in 1996 and is formed by elements/programmes focused on civic engagement, widening participation, and improvement of educational disadvantage.

13. *Financial participation of universities in companies other than spin-offs.*

Although this type of linkage may not necessarily represent a partnership as such, it is worth acknowledging, that some universities, such as the University of Kassel, have shares in different enterprises. This situation can obviously increase the possibilities of developing partnerships between those enterprises and the university.

14. *Participation in the governing bodies of universities.* This is not frequent. It takes place in German and UK universities and in some other places such as the Bocconi University, which due to its private ownership and disciplinary focus on economics makes it more prone to this type of interaction.

Considering this wide variety of 3M activities, it can be concluded that activities related to teaching issues are generally more specific and feasible to identify in terms of the functions of each stakeholder and the governance of the partnership. On the other hand, in those related to research activities, different levels of commitment, complexity and duration in the partnerships between universities and the industrial sectors are observed. While the simplest ones - consultancy and single R&D projects - are usual in most universities, large-scale joint ventures are less common. The governance of partnerships with business, however, may be complex even for 'simple' collaborations. It is noteworthy that some of the interactions described above are not designed to develop specific joint activities, but represent long-lasting, wide-ranging collaborations, as in the case of enterprise participation in university governing bodies.

This complex variety of activities is supported by structures and services at the institutional level to facilitate their development. **Support structures** are organised entities at central, faculty, department or other level offered to academics, administrative staff, enterprises, graduates or students to promote 3M activities or to facilitate their development. These structures perform functions which tend to be more related either to research activities (such as technology transfer offices) or to teaching (such as careers services); however, this distinction is not strict, since some functions affect both types of activities.

5 KEY ISSUES IN MANAGING 3M ACTIVITIES

The diversity of approaches to 3M is a consequence of many factors:

- **Historical and cultural differences.** In some places cooperation between universities and enterprises is easily accepted for historical and cultural reasons, but in other places, universities are more reluctant to cooperate.
- **Diverse economic contexts.** In some regions, a prosperous economic context stimulates 3M, but in others the stimulus comes from the need to overcome a less buoyant economic situation.
- **National or regional policies.** Governments have developed different policies (more or less explicit) for supporting 3M and also different financial instruments to incentivise these activities.
- **Institutional culture.** Institutions have their own cultures as a consequence of history, location or disciplinary approach.
- **Individual entrepreneurialism.** Entrepreneurial individuals in universities have envisaged different ways of developing 3M.

Conclusions based on the analysis of the cases of good practices in 3M activities in some EU universities could be extended to a great extent to most 3M activities around Europe. There are several favourable issues for managing 3M:

1. A clear conclusion is the **relevance of the contexts**. 3M activities need a certain initial basis (financial, legal and cultural). When all the conditions are negative, 3M activities do not seem feasible. Nevertheless, where and when these minimal conditions exist, 3M activities flourish only depending on institutional and individual initiative. When the context is not the most adequate, there are perhaps fewer initiatives but there is even more room for adopting innovative solutions.

Although the support of a large industrial partner or foundation may be helpful in some cases, 3M activities do not depend on the presence of big business or large multinationals in the region. They come in a variety of forms and also flourish in regions where many SMEs are located.

Successful 3M activities are always based on the innovative capacity of the institution in some area or field. Participant universities need to be strong in some area, though not necessarily in research. Teaching, financial or services partnerships are also feasible and they could be developed in most universities.

2. The **governance of the institution** has an important role in the successful development of 3M activities. A climate of institutional autonomy, flexibility

and appropriate management is a necessary condition. This ambience of flexibility should exist in all levels of the institution, including the management of human resources. Freedom is necessary at the level of the faculties/departments to engage in 3M activities and to recruit temporary staff to run projects as they appear.

Nevertheless, when institutional flexibility is limited because of national regulations on universities, 3M activities also flourish through external institutions related to universities but emancipated of bureaucratic burdens. The more regulated the system, the greater the tendency to look for “shortcuts” such as private foundations or external bodies. A separate private legal entity to organise, facilitate and manage the 3M activities may allow additional options for such partnerships to come to fruition and not interfere with the core activities in universities (as public organisations).

3. The **internal governance** of 3M activities is also important. It is necessary to have competent people with a variety of skills to support knowledge transfer, scout, coach, and give advice on business plans and IP issues.

Successful activities have governing boards where the university, the business sector and public authorities are represented. Their members often communicate and negotiate outside of the formal board meetings, sharing information and maintaining trustful relations.

4. Obviously, the **funding mechanisms** are another key issue in the development of successful 3M activities. Several aspects should be considered:
 - **Initial support** from public or private sources. Many successful activities had initially been supported by public authorities, foundations or enterprises. This seems to be a key aspect for those 3M activities which have a high requirement of initial investment such as science parks, but it is not a necessary condition for all types of 3M activities.
 - **Financial incentives** for 3M activities. Financial incentives are among the most frequently employed policies to support these activities. Fiscal incentives for 3M activities, although not very generalised, are also an additional instrument for involving business in partnerships.
 - **Personal incentives** to academics involved in the development of 3M activities seem to be critical. These incentives are not necessarily economic. Academic work is still to a large extent evaluated by traditional criteria of research excellence and productivity. Taking into consideration academic staff involvement in 3M activities for their assessment, promotion and academic recognition is a key incentive.

5. At least in the initial stages of successful 3M activities, **individual entrepreneurialism and leadership** is probably the most important factor. Most initiatives are to a great extent based on individuals or networks of people with an entrepreneurial vision and attitude. In most cases the key person is an individual with academic prestige and leadership, but who is also able to develop a strong network with local authorities and business people. Only after reaching a certain stage of development can the individual initiatives become institutionalised, but even in this case, 3M activities need a strong leader who speaks the language of the business world, is respected in academia, and is competent in networking.
6. 3M activities need the **mutual trust and commitment** of local/regional authorities and enterprises. Generally speaking there is a lack of understanding between the academic and the business worlds. Overcoming this barrier and creating a climate of trust and mutual understanding is a key element to having successful activities. A strong commitment and communication between the university and its partners is crucial in making these activities work.

6 UNINTENDED EFFECTS AND BARRIERS IN THE DEVELOPMENT OF 3M

The development of 3M in European universities also faces some barriers which prevent more efficient partnerships. Some of them depend on the context and not much can be done in the short-term to collapse these barriers, but others are more easily removable, at least in the mid-term. The main barriers are the following:

1. It is necessary to develop **a more favourable vision on 3M activities**. One of the problems detected is the university's reluctance to accept and put exchanges with enterprises into practice. But the problem not only comes from the university side. Businesses are not always interested in cooperating. An innovation strategy is possible only if existing distrust between university, industry and government is eliminated. To a great extent these barriers are mental and cultural. This is why a new attitude towards cooperation with the business world should be promoted. At least the following arguments can be used:
 - 3M activities provide benefits, but not only financial ones. There are many equally important non-monetary returns: generation of ideas, jobs, companies, research opportunities and projects. In summary, it can be said that 3M activities can serve as mechanisms of institutional development beyond themselves, they serve as positive factors for the development of the core missions of universities, teaching and research.

- 3M activities help to develop research that is more focused on social needs. It is obvious that in the long perspective basic research is consubstantial with universities, but applied research will be more adapted to social needs if the final or intermediate users of the outcomes from this research are involved in the process.
 - 3M activities help to develop teaching and learning modes better connected to socio-economic demands. 3M activities could help to reduce the gap between socio-economic needs and what students learn in universities. 3M activities can be a way to continuously update these needs and to find ways of meeting them. Connecting students with 3M activities could also be important to communicate entrepreneurship.
2. Entrepreneurialism is to some extent a natural condition for some people. Nevertheless, institutions may play a role in promoting or slowing down entrepreneurialism. **Facilitating entrepreneurialism** is something that all institutions can do. On one hand, they may develop incentives for entrepreneurial individuals (financial, but mostly recognition benefits). On the other hand, institutions may allow mobility and flexible working conditions for academics involved in these activities. However, the entrepreneurial activity of university staff should be monitored to ensure integrity and prevent undeclared cross-subsidies.
 3. Governance could be a barrier for 3M activities in many countries. Successful experiences are developed outside universities because in many cases the university structure does not allow a flexible management of 3M activities. **Increasing flexibility and autonomy of universities** is needed to develop 3M activities and, nowadays, is a feasible mid-term goal in European universities. Changing the governance models should also include a more flexible status for academics.

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