Introducing a business plan approach for entry level academic knowledge transfer activities

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Keywords

Abstract

In this paper, we focus on the establishment and first stage development of universities' Third Mission Activities, including Technology Transfer, Continuing Education and Social Interaction, by using a Business Plan-approach. Our main focus lies on the concept of Knowledge- or Technology Transfer Organisation. The qualitative data consists of workshops conducted in Albanian universities during the spring 2013. Critical Success Factors for establishing an effective Technology Transfer Organisation are evaluated with the observations in these universities. In addition, the critical functions for a Technology or Knowledge Transfer Organisation are located on a Business Plan Template. Business And Innovation Development (BID) – Centre of The University of Turku is currently contributing for the establishment of Third Mission Activities in the eastern and south-eastern Europe, namely in Albania, Ukraine and Belarus.

Introduction

Technology has been valued as a premier production factor driving economic growth and development since 1950s, based on Robert Solow's seminal article which emphasised the role of technology in the aggregate production function. The corporate sector has remained the main engine transforming technology progress into business and the corporate R&D function has increased steadily and even in an accelerating pace in the 20th century. More and more often the R&D functions are now done in networks and in cooperation between large and small companies.

Universities have also entered in the cooperation and networks with corporations. This kind of joint research activity has been going on in many universities, but quite obviously it has gained more and more attention lately and the amount of such cooperation has increased. In the course of this development universities have organised services to support the industry cooperation. One outcome of this development has been that the universities are aiming to get their research utilised more efficiently. In particular this is achieved through technology transfer activities in order to boost the science- or knowledge-based entrepreneurship in the regionally and nationally (Debaeckre, 2012, 3; Rasmussen & al, 6). Industry-science links have become a key dimension in both innovation management and innovation policy. In order to support and develop the links between the worlds of science and industry, professional technology transfer organisations (TTO's) have been frequently established in universities around the world.

Technology-, Knowledge Transfer and Third Mission

In this paper, we focus on the ways of establishing Third Mission Activities, including Technology Transfer, Continuing Education and Social Interaction. Our main attention lies on

the broad definition of Technology Transfer, which can also be referred as Knowledge Transfer, which extends the Concept covering most of the Third Mission activities. The Technology Transfer Organisation (The TTO) can ideally be positioned at the interface of academia and industry in order to manage the latter's access to academic output, including inventions. One might advocate the use of the concept of "Knowledge Transfer Organisation" (The KTO) rather than "Technology Transfer Organisation". The ever evolving role of the TTO, encompassing a variety of knowledge transfer activities that move beyond the strict realm of "technology", supports and advocates such a view. However, as the concept of a TTO is by now well recognised in the professional innovation community, the acronym TO be used together with KTO in this paper. The "technology" needs to be interpreted in its broadest, fully knowledge-based, sense when using the term. (Pertuzé 2010, 84; Debaeckre 2012, 14)

The development of Third Mission Activities in European Universities

The success of maintaining and developing Industry-science links in universities can often been seen as a function of the performance of existing Technology Transfer Organisations. According to Debaeckre, the relevant TTO key performance indicators are the size and (financial) volume of: 1) the collaborative research portfolio, 2) the portfolio of discoveries, patents and licences, and 3) the spin-off portfolio. The TTO should also develop the necessary and appropriate processes and IT-systems to facilitate and support those management tasks. It addition, it should build a team capable of dealing with those activities. (Debaeckre 2012, 9)

Table 1: Three Levels of TTO Development (Debaeckre 2012; 6-9)

	Level 1, "The Island"	Level 2, "The Centerpiece"	Level 3, "Inclusive Operation"
When:	Before 1995	1995-2005	From 2005
Organisatorial status within the university	TTO as a separate "island" at the periphery of the academia	The centerpiece of the university "third mission". Operation becomes university-wide and more professional.	TTO activities now diffuse and interweave alongside the two core missions of education and research. The TTO is fully embedded within the university
Business model:	No actual Business Model	Integrated business models	The omnipresence of the TTO throughout the full internal value chain of the university turns it into a truly and fully inclusive activity
Main activities	Contract negotiation	Management of intellectual property, contract portfolio, and business development through spinoff creation, including increasing impact on regional development	Technology transfer activities generate a variety of relevant spillovers (cognitive/intellectual as well as financial) towards the education and research activities of the university.
Motivators:	TT activity not used in measuring performance of scientists	TTO achievements are taken into account when measuring academic performance	TTO achievements are taken into account when measuring academic performance
Publicity:	Limited impact and visibility	impact and visibility have increased rapidly	Level 3 will further heighten the impact and the visibility of TTO operations in academia.
	still actual as an entry level concept for 3rd Mission – for example in Albanian universities	"Level 2" can still be observed at many EU-universities.	"Level 3" is expected to take full effect in the decade to come

However, the studies about Technology Transfer Organisations focus mainly on the performance of existing TTO:s, which - especially during the second and third "level" - are already recognised as parts of the Universities functions in both strategic and institutional level. Taking into account, that there are a number of universities in Pan-European context almost completely without any Third Mission (Including Technology or Knowledge Transfer) activities. Another group consists of the Universities, who have currently just entered the aforementioned "Level 1", but who are struggling for making their presence known among the industries, but also inside the University itself. Examples of non-existing 3rd mission activities can be found among Albanian Universities, which are used as a case example in this paper.

Case Albania: Introducing the KT, exploring the challenges

Our case introduces a group of Albanian universities including Polytechnic University of Tirana, Agricultural University of Tirana, Aleksandë Moisiu University of Durrës, Skhodra University and Eqrem Çabej University in Girokastër. In the spring 2013, The University of Turku Business and Innovation Development conducted a series of workshops, one in each university, involving both university administrational and faculty level management.

Each of the universities didn't officially recognise the Technology or Knowledge transfer as part of their activity but some of them had been developing their relation with the industry nevertheless. For preparing the universities for entry level Knowledge Transfer activities, the management was asked about the existing practices- official or unofficial – as well as obstacles and challenges in starting various Third Mission Activities. The results of the workshop discussion are presented aligned with set of the most relevant TTO Critical Success Factors (Debaeckre 2012, 12-14) which are categorised according to their nature as 1) a part of university/Governmental strategy 2) University's internal routines, which we refer in this context as the "Back Office" and 2) Relevant with the contacting and managing university-industry relations, which we refer as the "Front Office". Some of the success factors are not included, because they are for monitoring long term performance of an existing TTO.

Introducing a Business Plan Approach for launching Technology/Knowledge Transfer

The objective of this Approach is to suggest a clear methodology on how to proceed to implement the entry level Technology Transfer Organisation in an Albanian university. Several aspects have to be considered in order for the TTO to be successful and sustainable. The Business Plan will provide the modules to build solid foundations and be able later on to develop new activities according to the university's needs.

The university Business Plan is divided into six entities. The "phase 1" consists of the Mission Statement. It refers to the recognised status of Third Mission activities within the university. Following is the second phase during which the university will be invited to analyse its environment by entering in direct contact with employers, organisations and graduates.
The third phase will be dedicated to defining the products and services the university has to offer. During the fourth phase the Marketing Plan will be defined, characterising more concretely how to develop academia-industry connections. The fifth phase will present possibilities on how to operate and manage the RDC. Finally the last phase will present the schedule of the implementation, an important communication tool within the university. It will ease the visualisation of the whole concept.

Table 2: How Albanian universities met Critical Success Factors

Nature	Success factors	Description	Case Albania
Strate-gical level	Necessary level of governance autonomy Legal framework	Strategic flexibility and financial autonomy within the (traditional) university structures in the way that it fits the university's specificinstitutional context for universities supporting the TT and for the IPR ownership	In all of the Albanian Universities the lack of autonomy was seen as a key problem. The two universities located in Tirana experienced the autonomy issue less critical than the lack of adequate financing in general. However the ability for independent financial decision-making is closely connected to the autonomy issue. In order to recognise the Third Mission on the university level, is has to be first recognised on the governmental level and the emerging TTO's within the Universities have to gain some degree of autonomy. In addition, a part of the income created by Knowledge Transfer, has to stay in the particular university. The importance of policy context of innovation is widely accepted (Bercowitz 2006, 188-189) and the Albanian government needs to make the relevant legislative decisions.
Back Office	The incentive and code-of-conduct schemes for the academic community Integrating or aligning front- and back-office operations Implementation of a transversal structure	Accepted by the university management – for stimulating and monitoring the technology transfer activities and behaviours of the researchers. Including schemes stipulating the share the academics will benefit from licensing and spin-off operations. Contract management, management of IPRs, support for project administration, management of business development, financial and personnel management - integrated within the TTO support function. The TTO being well connected to the research operations of the research labs and departments This is for involving the researchers for translating their works into a format more useful for industry.	For the reason that there was no existing patent pool in these universities so no experience from selling any IP yet. The academics had the incentive to teach in other (private) universities and work as external experts within industries. The university is not a contract partner in these operations. Contract management generally as part of HR office. The need for developing the staff for making consultative or collaborative research contracts was identified in almost all of the universities.

Front office	Innovating the technology or knowledge transfer process itself	Traditional contract and consortium research schemes are complemented with joint research platforms where academic researchers work alongside industry researchers, co-developing new basic research and application routes. Management of these co-creation platforms becomes a critical success factor – if the necessary skills are available	The concept of the Knowledge transfer was already understood in all of the universities, but the on-going transfer processes were conducted separately, without coordination – all of them based on personal relations with someone in the industry. The scientists were contributing into the Knowledge Transfer merely as a personal project.
	Understanding and experience with the academic environment	For understanding the needs of industry and business, the TTO staff needs to have an understanding and experience with the academic environment and how it functions and behaves. As a consequence, an effective TTO operation requires experts who are capable of translating the needs and objectives of the one side into the language understood by the other side	The existing history of Knowledge Transfer cases should be listed with all relevant information (stakeholders, type of KT etc.) and gathered into one place for ensuring the continuance of activities. This is one of the first tasks as well as gathering of the academic input by forming a publication database. When establishing the TTO's, the Albanian universities find it challenging to compete with private businesses – and in some cases with private schools - in recruiting the necessary expert staff.

Stage 1: the Mission Statement

Although recommended, launching Third Mission activities does not necessary require an amendment in the university's official strategy. The important point is that the need for 1) transferring the Technology, 2) increasing Contacts with the surrounding world and 3) providing Continuing Education is widely accepted in the university's management as well as on the faculties' level. Moreover, the emerging TTO should be tightly aligned with its supporting institution's missions and goals. However, the strategy can be seen as part of a "Third Mission Business Plan" as it officially recognises its role within the university.

If the university identifies the need to integrate the Third Mission into its Strategy, following is an example from the University of Turku which can be used as an example. The Third Mission is mentioned as a separate chapter which was annexed to the strategy in 2012. All areas of the Third Mission are described and recognised in the chapter as well as specific actions to reach them.

Example: Central measures in university of Turku strategy:

- The university will gather its services related to Third Mission into one entity. A joint web-based database will be created for cooperation with stakeholder groups, where the necessary support material will be collected
- The university will strengthen the search for, upgrading of and commercialisation of innovations by systematizing the management of innovation processes.

- Within the university, criteria that measure third mission activities will be taken into use and they will become one of the bases for resource allocation."
(University of Turku Strategy 2013-2016 2012, 18-20)

Stage 2: University and its business environment

In order for the university to implement a successful RDC which will develop and evolve with time, the current resources of the university as well as the situation and expectation of its local environment have to be identified. This phase mentioned earlier as the second phase, is one of the most important.

What the university has to offer - strengths and weaknesses?

The university knowledge resources can be recognised as its strengths. The first step is to identify what the university could offer to its customers. Customers refer to the entities with whom the university is or can interact with. It comprises institutions, organisations, companies, students and graduates.

It is recommended for this stage to list all possibilities the university can offer taking its capabilities into account. Three types of internal resources to be offered can be identified at this stage: physical facilities, research and other personnel; and the publications, outcomes of research activities (Intellectual Property). This stage will ease the Third Mission activities orientation and their organisation. The weaknesses of the Institution refer to current activities or organisation which might prevent or slow down the implementation of the Knowledge Transfer. As examples: the university strategy does not recognisethe importance of Third Mission; no current contact with companies; no existing publication database, etc.

The Business Environment

The university environment has to be identified also, as the objective of the RDC is to interact with the local environment and establish partnership to answer its needs. National and regional policies and objectives should also serve as a framework for shaping the centreand directing priorities. The current situation can be analysed by identifying facts and interacting with representatives of organisations, companies and local authorities. At first, general regional facts can be identified such as: 1) the number of habitants and density 2) the economic characteristics of the region: type of industry, their size and growth rate 3) the regional challenges and opportunities: economic, cultural and social 4) the region expectations from the university

Secondly, the facts concerning the university can be identified as 1) the characteristics of current partnership with the 1) industry 2)organisations and 3) other Institutions (Universities and schools): type, duration, sustainability, results

Stage 3: University and its products and services

After the university resources and its environment is identified, the third phase will be focusing on identifying the targeted audience and the products and services the university can offer and promote through the TTO. The TTO should decide upon its objectives, which will determine how the office will be configured, resourced and operated. The target audience has to be identified, in other words, it has to be defined to whom the university is targeting its services

to. The description of the target audience can remain general at this stage. A wider audience can be reached later on and evolve with the activities implemented at the university.

The products and services the university can offer through the TTO can be categorised as 1) publication database 2) education and research references 3) intellectual property 4) physical facilities 5) personnel 6) social impact and activities. For each category, the university can define where its core expertise lies and to which activity(ies) to focus on. If the university has the appropriate resources, it can offer activities related to the three components of Third Mission: Technology Transfer, Continuing Education and Social Interaction. But, the university can also prioritise solely one of the components at first and expand to the other components later on.

Stage 4: Marketing Plan

The Marketing Plan conception is mostly based on the results of the university- and Business Environment analyses made earlier. A Marketing Plan determines the actions how and in which way the university reaches its potential customers and how these contacts are managed. The Marketing Plan works also as an instruction manual for the personnel responsible for taking care of the actual and potential customers. If the RDC is established as a virtual organisation, the Marketing Plan is an important communication tool. As the product and services provided by the university as well as the targeted audience have been identified earlier, the Marketing Plan will focus on how to connect the university resources with the local environment. Each product or service can also be segmented per target group (students, graduates, companies, organisation, adults, children, etc.).

Stage 5: operations and Financial Planning

This 5th phase concerns the general characteristics of a new Technology- or Knowledge transfer Organisation. During this phase the general functions of the TTO and its organization will be defined. In this paper, the Concept of Front and Back office refers to the internal and external functions of the TTO as seen from outside the university. In the Business Plan, we can also use the concept of operations on Customer Surface.

The Front Office or Customer Surface

The characteristics of a TTO Customer Surface has at least the following requirements: 1) It acts as a place (physical or virtual) in the organization, 2) It identifies the customer needs in the area (how local businesses and authorities could be helped by the university) and what outside world is expecting from the university, 3) It contacts the customers (companies, organisations, authorities), preferably using the CRM, 4) It can easily be contacted by the companies or public authorities - clearly identifiable from the university webpage,5) It has the information about services and facilities the university can offer for the outside world 6) It has the knowledge of who are the current and potential customers, thanks to the customer database CRM and upkeeps and updates this information. Also other stakeholders, e.g. Alumni, can be added into the same system 7)Is recognised by all departments and faculties of the university and 8)It implements a Marketing Strategy

The Back Office – or intra university support

The characteristics of a TTO Back Office has at least the following requirements: 1) As well as the Customer Surface, these activities also require a place (physical or virtual) in the organization, 2) It provides support for faculties/departments/researchers by participating

projects (domestic and international), arranging external funding, making research and other contracts and protecting and utilising their Intellectual Property (IP), 3) Ledger/invoicing: If and when it is possible to get money from providing services or renting facilities, one person should be responsible for invoicing the customer.

A virtual or "Brick and Mortar" office?

Virtual organisation does not require new facilities or recruitment of new staff. In this organisation, the roles and functions mentioned in the previous chapter are added as new working tasks for those already working in the university administration.

Launching the Third Mission activities by establishing an office with hired staff is closer to the way how Central European universities have been doing. A new office has staff, who is completely dedicated to the RDC and who is not involved in any research or teaching activities themselves. The selection between a virtual or physical organisation is not irreversible. The TTO can start as virtual and after it has been functioning with satisfactory results, the functions can be moved into a separate office. It has to be kept in mind that in either case, the office will be accountable to the university governing body and will be expected to produce at least annual reports of activity.

Stage 6: Implementation

Understanding the TTO lifecycle, mentioned earlier in this paper, it is essential to encourage academics to participate in its activities. It will also bring a clear vision of the different stages and activities to be implemented, which is why a schedule is needed. The schedule should consider each product -or service and evaluate the duration of each implementation. It should also identify the available resources and be planned accordingly.

It should also include which activities will be organised and when per service. If the university decides to implement the Alumni network, the schedule will consider the pre-phase on how to collect the students/graduates information, but also the second-phase that is how to involve the Alumni into the university life (sending newsletter, inviting them to conferences, recruiting interns, etc.). Monitoring the implementation confirms, that the activities follow the schedule and the Marketing Plan. Evaluating the progress and the results of the activities will indicate if the implementation has been successful or not and allow some changes if necessary.

Conclusion

The amount of universities engaged with Third Mission and TTO's is still rising at high pace. While the Knowledge transfer activities in Western European and US universities reach already their 2nd or 3rd level, there are a number of universities just entering the Third Mission finding ways establishing and "cold-starting" the consistent co-operation with the industry and other stakeholders in the outside world. The Technology Transfer Organisation is one way for achieving many of the Third Mission objectives and it concentrates the most important TT functions into one place – physical or virtual.

In this paper we have presented some of the common challenges met by the Albanian universities in entering Knowledge transfer and the Third Mission in general. For lowering the threshold in making the first steps, we have suggested a Business Plan –type approach with can be used as a template helping the local universities to take the most relevant functions and

requirements for a functioning TTO into account when they start including some Third Mission activities into their everyday life.

The University of Turku Business and Innovation Development department continues benchmarking and developing the universities in Eastern and South-Eastern Europe, helping them to find comfortable entry-level strategies for Third Mission. The analysis of the universities will be based on qualitative as well as quantitative data and it will be coupled by financial data analysis of the industries around them.

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