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UNIVERSITY OF WARSAW ON ITS ROAD TOWARDS THE MODEL OF ENTREPRENEURIAL UNIVERSITY

Summary

In this paper we deal with the idea of an entrepreneurial university in Polish conditions with a special reference to the University of Warsaw, the biggest university in Poland. We try to prove that the signpost on the road towards such model of a university is a proper strategy of research cooperation between the University and the economic environment, especially with the business sector. We argue that the strategy should be based on a marketing approach. However, there is still a long road ahead of the University of Warsaw towards the model of entrepreneurial university.

Key words: entrepreneurial university, research cooperation, University of Warsaw

1. Introduction

The main aim of this paper is an attempt to answer the following question: What should be done so that University of Warsaw can become an entrepreneurial university? The answer seems quite simple: The signpost on the road towards such model of a university is the strategy for a significant broadening, differentiating and improving of research cooperation between the University and its economic environment.

The university environment is a very broad concept. Here we have in mind an economic or business environment. We shall also use the business sector as an equivalent in a broader meaning, i.e. including health service, urban transportation, schools and other educational institutions, public administration, local governments, etc.

The paper is based on the fragments of the latest report [*Założenia do strategii współpracy badawczej...*, 2015], unpublished. For the purpose of that project, we have adopted a marketing approach to research and development (R&D). In marketing, as known, the whole thinking starts somehow from the end, from the market, i.e. from recognition of social needs that appear as demand just in the market. So, the market drives an enterprise, institution or another organization functioning according to the marketing orientation.

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Such approach seems fully reasonable in the case of university research that forms a market activity, too. The more so that commercialization of R&D results and cooperation with the business sector – as two key features of an entrepreneurial university – have their roots going as deeply as to the phase of research initiation or even to ideas of new products, processes or services that should heed some social needs.

2. An entrepreneurial university in the market

The concept of entrepreneurial university was used for the first time by Clark in 1998 and then popularized by Etzkowitz [2002]. According to the latter, a modern, entrepreneurial university is no longer an ivory tower but a global economic engine [Etzkowitz, 2014, p. 6].

For Clark [1998], one of five fundamental features of such university is a diversification of financial sources. This diversification means that – apart from budget grants and student tuitions – the third stream of financing (third-party funding) is being searched – expected from the business sector, local governments and alumni; and also from intellectual property rights' (IPRs) protection and services offered by a university campus [Leja, 2013, p. 67].

An entrepreneurial university is the managerial construct of driving the university. According to Pluta-Olearnik *et al* [2009, p. 7], a modern, entrepreneurial university is a multi-dimension institution operating in numerous fields, looking for new chances and actively creating its future. Also, this is an institution characterized by flexibility in adjusting to changing conditions of the market of education and research and permanently seeking competitive advantages – see also [Poplawski *et al*, 2013, pp. 30, 35 and 185].

The idea of entrepreneurial university was brought into the Polish literature by Jablecka in 2002. While analyzing world experiences in the mid-20th century, she describes four coordination models of the system of higher education and academic research. One of them is the model of market coordination that assumes university's independence in goods' exchange with its environment. Individual academic employees or higher-education institutions (HEIs) provide teaching and research services to the environment and in return they receive resources for their activities [Jablecka, 2002, pp. 25 and 188-205]. It was just the market model of coordination that was a kind of base for the appearing of the concept of entrepreneurial university.

According to Leja [2013, p. 57], Polish universities have overcome subsequent phases of transformation. The first stage – a growing number of students – has been already completed; the second one – an improvement in public finance efficiency – is now underway, and the final one – a partnership with the enterprise sector – is ahead of us. Leja notes that there are three regulators of a modern university existence: legal regulations, the market of services offered by a university and a growing social pressure [ibidem, pp. 191-192]. Here we are mainly interested in the second regulator.

Pluta-Olearnik *et al* [2009, pp. 23-25] formulates and analyzes four orientations of an entrepreneurial university. This is a kind of reference to the four coordination

models. One of them is a market orientation that is fulfilled when the university shows five features, among them: (i) while running research projects the university cooperates with the business sector, and (ii) very well knows and monitors a competitive environment.

According to these authors, since a university is a subject in multi-sided market relations, it requires a good organization of marketing activities. ‘Time has come for a university’s professional marketing’ [Pluta-Olearnik *et al*, 2009, p. 57]. University as a market participant must effectively react to changing environment conditions.

All cited authors very critically evaluate the state of entrepreneurship in Polish universities. Also Gorzelak [2009] and Poplawski *et al* [2013] are full of criticism of this issue. As it results from the previous report [Jasiński, 2014], there exists a big gap between the R&D potential of University of Warsaw and the scale of its research cooperation with the business sector. Leja [2013, p. 259], referring to Hamel and Prahalad [1999], writes in this context about a gap between university’s aspirations and resources.

University is a subject that produces knowledge² and so has a duty to share it with (a) students as an internal world, and (b) an environment as an external world. Of course, this sharing takes place then when there happens a knowledge transfer from a university to outside, usually accompanied by a transfer of intellectual property rights. However, we must remember that, nowadays, a capacity to generate a new knowledge becomes less important than an ability to sell it – or buy – and to use it efficiently [Tidd, Bessant, 2009, p. 717].

We understand this as follows: it should be a double-sided knowledge transfer, in other words, a permanent exchange of knowledge should occur between a university and its environment – with benefits to both sides. This also confirms the validity of a broader approach to commercialization of R&D results and of research cooperation with the business sector.

Of course, the knowledge being made available to the economic environment should:

- be a source of incomes for a university and its employees,
- be legally protected; here we mean the intellectual property rights’ protection, and
- have a certain value for its user. This user can be, for example, a student, an academic teacher or researcher, an economic entity, a local government, etc.

Admittedly, a university is not a firm but let us look at it as a modern institution which operates in the business surroundings. Then a relevant subsequence of questions, being asked ‘from the end’ while creating a university research offer for the economic environment, should be as follows:

1. what does the environment expect from us?
2. do we offer exactly what is expected from us?

² Breznitz [2014] even notes that the main role of university is to be a fountain of knowledge in its region.

3. (if not exactly) what should we offer?
4. what should be an object of commercialization?
5. so, what research initiatives should we undertake?

There is an opposite mechanism, too: How to sell what we have already done, in other words, possessed results of research? This is also an equally important problem and here marketing will be helpful, too. So then, we first must know what we possess, what value we can offer, what knowledge we can/want to share.

Commercialization of the results of R&D work is, to some extent, a symptom of university's cooperation with the business sector because their practical implementation usually takes place in an enterprise (the existing or a new one) in order to launch a new product, process or service into the market afterwards. Also, it is in the university interest to investigate vicissitudes of life of academic research results. We must remember, of course, that University of Warsaw is not a university of technology (polytechnic) where the range of cooperation with the business sector is, in the nature of things, more broader.

To sum up, the recommended marketing approach to the management of research activities in an entrepreneurial university can be presented as follows³:

Commercialization ← Knowledge transfer ← Research project ← Research initiative

This is a recommended subsequence of thinking. However, the marketing approach requires starting from an analysis of the business sector needs.

3. A market of research projects/services

The main element of university surroundings is the market environment. A university operates in:

- the service market (education, research, expert analysis, advisory, training),
- the commodity market – in a narrow range; we here mean the science infrastructure,
- the public funds market (funds for education and R&D), and
- the labour market.

The first market, i.e. services, can be conventionally divided into education and R&D. Here we are especially interested in the market of research services/projects. This is, at the same time, an institutional market (B-to-B) in which the consumers do not participate. So, there is a double specificity of the market we deal with in this paper.

As known, each market has two sides: (1) supply and (2) demand. In the subjective depiction, **the supply side** consists of those who offer/perform research services/projects. Among them there are competitors. Next, **the demand side** consists of recipients/users of R&D work. Here we have three basic groups/types of entities: 1) enterprises, both private and public, 2) institutions, both public and private,

³This must be read from left to right

including self-governments and 3) other non-profit organizations, mainly non-governmental organizations (NGOs). Pluta-Olearnik *et al* [2009, p. 83] comes up to this in a different way, dividing a university environment into three (macro) segments: alumni, a competitive environment and an economic practice which are further developed by her into six groups of entities.

In the objective depiction, an R&D project/service should be treated as an object of:

- an offer of research services/projects,
- research cooperation with other economic entities, and
- competition, mainly with research institutions.

This is **the supply side**. Then, **demands** for R&D projects/services are being submitted by numerous and various economic entities. However, we should not treat them as typical clients. They ought to be treated rather as participants in research processes and actually as partners in a long-term cooperation or even broader as our stakeholders. From the point of view of a university, the stakeholders are, for example, employers employing our alumni and also alumni per se who should be treated as a kind of liaison officers between their university and the business sector. In the case of a university, the stakeholders are, of course, public institutions and citizens, including local communities.

The growing role of stakeholders in the environment of a modern university is underlined, e.g. by Leja [2013, p. 72] and Poplawski *et al* [2013, p. 32]. The environment expects from a university a new, useful knowledge which is or should be created with participation of broader and broader groups of stakeholders. They fulfill a double role: they are not only recipients of the services but also co-creators of the offers. This lies in a university interest, of course, to fulfill their expectations which requires establishing relations with them, admittedly, goals of various groups of stakeholders may sometimes be contradictory to each other [Leja, 2013, pp. 155, 190, 204].

Basic forms/ways of research cooperation with the university economic environment are as follows:

1. contract research ordered by firms and other economic entities,
2. joint research projects together with economic entities,
3. creating and participating in research consortia,
4. commercialization of own research conducted in a university,
5. cooperation with institutions announcing public procurements in R&D services,
6. expert analyses, advisory and trainings for enterprises and other entities.

So, a university – as a scientific and research institution – should know how and where to seek:

- customers for research and expert analyses – this is the main category of recipients in the university economic environment,
- partners into consortia applying for research projects, domestic and foreign. Besides firms, such partners will be research institutions some of which may be competitors in everyday life (this is a so-called coepetition),
- entities interested in implementation and commercialization of results of a university own research,

- institutions announcing public procurements.

Thus, considering a university research offer addressed to entities belonging to its surroundings, one should speak not about a sales offer but rather about a cooperation offer.

A general picture of universities' cooperation with the business environment in Poland is shown in empirical studies by Pluta-Olearnik *et al* [2009, p. 105]. Here we shall quote only opinions among representatives of enterprises⁴, because – in the marketing approach – their point of view is more important than the view-point of representatives of research institutions. Some of the results are as follows:

- the bigger the firm, the bigger the interest is in cooperation with universities,
- the hitherto cooperation initiatives were more often initiated by business representatives than by scientists,
- enterprises in a narrow range use the knowledge potential of university employees, because as much as 56% of managers did not order any research from universities,
- the most often mentioned forms of cooperation between business and science are: receiving students for practical trainings and attendance in university open trainings which refers mainly to smaller firms and
- the main barriers for the cooperation, viewed by the managers, are connected with: a lack of broader information about possibilities for such cooperation, a lack of collaboration offer from the side of universities (sic!) and an excessively theoretic approach by scientific workers to problems in an economic practice.

In turn, Leja [2013, p. 163] mentions the following results of barriers in university-environment relations: a small influence of the economic environment on university activities, too small share of the business sector in financing university R&D and ineffective, wrongly directed strategies of Polish universities.

So, the present state of this cooperation is highly unsatisfying, especially a passive attitude of universities. This proves a lack of the marketing approach on the side of academic institutions. Therefore, the research service/project market is not sufficiently developed.

In the spatial depiction, University of Warsaw operates in local, regional, national and European markets. We are naturally interested in a regional market that is the Mazovia voivodship/region which has some specific features due to the fact that a capital city is here. However, the range of the Warsaw University's influence is much broader.

4. The present state of affairs

University of Warsaw is '2 in 1' because it consists of two visible, integrated parts: A – is a kind of natural sciences university, B – is a humanistic university (see the table below). The following conclusions – general but a bit simplified – result from it:

⁴ Managers of 125 firms in the Lower-Silesia voivodship have been interviewed.

1. University of Warsaw is a humanistic and natural sciences university,
2. a research potential in social and humanistic sciences (let's call them soft) is three times bigger than in natural sciences (called hard),
3. research in 'hard' sciences have a bigger importance/weight: a domination of basic research, a higher cost-intensive R&D work, etc.,
4. research results in 'soft' sciences are more easier for practical applications, and
5. in social and humanistic sciences are bigger wideness and diversification of their offer that, apart from research, may contain expert analyses, advisory and training services.

TABLE 1.**University „2 in 1”**

	Part A (Natural Sciences)	Part B (Humanistic)
Affiliation to sciences	Natural, technical and medical	Social and humanistic
Number of academic teachers (in 2013)	852 = 26,8%	2.327 = 73,2%
Dominant type of R&D work	Basic and applied research	Applied research and development work
So-called closeness to the market	'Further from the market'	'Closer to the market'
Degree of materialization of R&D results ¹⁾	Bigger	Smaller
Cost-intensiveness of R&D	Higher	Lower
Nature of sciences	'Hard'	'Soft'
Role of IPRs	Much bigger	Much smaller
Wideness and diversification of a research offer	Smaller ones	Bigger ones

¹⁾ a routine result of a research project usually is a research report

Source: [*Założenia do strategii współpracy badawczej...*, 2015, p. 25].

The following, selected observations result from the study done last year [Jasiński, 2014, p. 29]:

- University of Warsaw has a 'research layer cake' big enough to be a potentially attractive, broad and highly differentiated offer for its environment, especially economic,
- from a view-point of the University cooperation with the business sector, too small are the scale and share of research close to the market: contract research is a margin of the University of Warsaw research activities,
- alarming is the situation in patenting, technology transfer and commercialization of research results obtained in the University, and
- there are some weakly exploited sources of incomes that may be allocated for research projects. For instance, the University incomes from teaching subsidies

and student tuitions in 2013 were exactly twice bigger than from research activities.

This unsatisfactory state of affairs comes as a result of a series of numerous reasons [Jasiński, 2014, p. 30]. This refers not only to University of Warsaw but generally to Polish universities. Still, there exist a big informational and emotional distance and a low level of trust between both sides: the world of science (not only academic) and the world of business (not only private).

At least one conclusion results from the above considerations: University of Warsaw urgently needs to have a strategy of research cooperation with the business sector. For this purpose, we have conducted an analysis of the market in the Mazovia voivodship, including our competitors on the supply side and the market segments on the demand side [*Założenia do strategii współpracy badawczej...*, 2015].

5. Circumstances and assumptions for the University strategy of research cooperation with the economic environment

In The 2008 Strategy of University of Warsaw we can find a note that ‘the University should increase its activity in looking for external sources also through the cooperation (...) with a private sector’. Next, in an amended Strategy of 2014, there are notes on such necessary actions of the University as: the strengthening of actions in the transfer of technology and knowledge; a dialogue with entrepreneurs; the increasing of capacity to leverage own incomes, not from public sources; an improvement in the efficiency of knowledge commercialization; and the creation of a kind of business arena for research projects and grants [Monitor UW, 2014].

This is undoubtedly a good direction on the road leading to an entrepreneurial university. This road leads, first of all, through (a) commercialization of the University R&D work results, and (b) research cooperation with the business sector. The awareness is growing in the University community that it must follow this strategic direction, not resigning, of course, from the University most important, classic functions, i.e., teaching and researching.

According to De Wit and Meyer [2007], the process of creation and implementation of a university strategy consists of: a strategic thinking, a strategy formulation and a strategic change. Here we limit our considerations only to the first of these elements. The necessity of a strategic thinking/approach results from, among other things, the need for a longer time perspective in research cooperation between universities and the business sector entities. Therefore, such strategy should embrace, for example, five years (2016-2020). It must be, of course, integrated with a general, overall strategy of University of Warsaw.

A modern approach to the role of a university in its surroundings requires considering the whole complexity and interdependencies between internal and external ties. The internal context consists in the adjustment of internal University ties to a dynamically changing environment. If the external ties strongly determine a survival of a university as an independent institution, then there is a great importance of such

internal system that will be quickly and flexibly reacting to external signals and after processing will address them to relevant university units [Pluta-Olearnik *et al*, 2009, p. 12].

Now, as far as the external context is concerned, Leja [2013, pp. 232 and 281] formulates an interesting strategic dilemma⁵. Namely, how to create a university offer: Whether university researchers and managers should be driven by the environment's expectations (a demand approach) or should they shape these expectations thanks to available resources (a supply approach)? In the management of this dilemma, the stakeholder theory should be helpful where stakeholders are treated as partners who are being invited to co-create a value. In connection with this, according to Hamel and Prahalad [1999], one should make a step outside an orientation on the client. In our opinion, both approaches (via demand and via supply) should be taken into account simultaneously.

During a university research cooperation with the economic environment the market is more important than the academic institution. It is the market which must need research services and not the other way round. Koźmiński [1999, p. 239] sees a university as 'effectively functioning, entrepreneurial service organization that plays a very important social role'. Indeed, but one must be very careful because this university 'commercialization' may limit the freedom of scientific research and of other academic liberties. Many Polish and foreign authors pay attention to this, e.g. Leja [2013], Pluta-Olearnik *et al* [2009], Szpringer [2008], and Breznitz [2014] who adds that a university is not a profit-generating machine. In turn, Poplawski *et al* [2013, p. 180] write that entrepreneurial behaviours positively influence a university's autonomy.

Since this is to be a strategy of research cooperation with market entities, it should be based, among other things, on a marketing strategy. This should be the **differentiated marketing strategy**. Shortly speaking, such strategy assumes the offer 'something different for everyone'. This means that for each of selected segments/target groups of a given market – in this case the research service market – a different product offer is prepared, differently priced, promoted and distributed or delivered to a given market segment (this is the co-called marketing-mix). Such strategy has two varieties. It may be:

- a) a full-range strategy – if it embraces all segments of a given market (rarity), or
- b) a non full-range strategy – if it is concentrated only on a few selected segments.

In the case of University of Warsaw we propose that it should be the strategy concentrated on priority segments acknowledged by the University, at least, at the beginning. The decisions on this issue should be taken by the University headquarters or by managements of schools/departments.

When a cooperation initiative is already undertaken, university schools/departments should create a kind of virtual organizations. According to Szpringer [2008, pp. 26-27], a virtual organization may be a temporary configuration of organizational units cooperating with each other to gain joint timed goals. This is a temporary creation being established for the period of a joint task/project, for example, a research project.

⁵ He uses the term 'a strategic paradox'.

A new task initiates the virtual organization consisted of the organizational units having expected competencies. The aim of such organization is to deliver a product/service at a requiring quality level, at minimal costs and over the shortest possible time, assuming a maximal added value at each phase of the value chain. Benefits connected with such choice of partners (or allies – AHJ) are evident and refer mainly to cost cuts, risk sharing and possibilities to fulfill the task [ibidem, p. 27].

There is no objection that such inter-school organization is based on an internal, sound cooperation and on a mutual trust which should not be difficult to gain because the University schools belong to ‘the same family’. Frankly speaking, all cited authors pay attention to an extremely significant issue of trust between partners – both internal (in a university) and external (in its environment).

A concentration on the client grows in importance [Szpringer, 2008, p. 27]. Agreed, but let us remember that the appreciation of competitors also has a special significance. Here we mean, among other things, competitive advantages of a university. Pluta-Olearnik *et al* [2009, p. 84] mention three of them: tradition, authority and prestige. We should add an interdisciplinarity, wideness and differentiation of the offer based on exceptional competencies/specializations of University of Warsaw. These are the strategic trump cards important for the University stakeholders.

An extremely essential element of the strategy must be a proper way of a university communication with the business sector. All the mentioned trumps should be widely popularized during communication with the University environment. Such ‘communication channels’ can here be used as students (especially extramural), PhD students and alumni.

Next, ways of reaching various economic entities with the University offer will be differentiated depending not only on the size of an entity and a sector it belongs to. The ways will also depend on the character of the entity: whether it will be our customer, partner in a consortium, a firm implementing results of own research conducted in the University or an institution announcing public procurements.

In the process of research cooperation with the economic environment University of Warsaw can play various roles, apart from the one as an executor/performer of research services/projects. The University may play the role of:

- a cooperation initiator,
- an organizer/ animator of the collaboration process,
- a participant in a strategic partnership, or
- an alien in consortia applying for research projects.

All the roles are recommended for University of Warsaw.

6. Conclusion

There is still a long road ahead of University of Warsaw towards the model of entrepreneurial university. There is an urgent need for a strategy of research cooperation with the business sector which should be based on marketing. The strategy ought to be:

- decentralized: the University schools/departments should be key actors on the cooperation scene, although there should be a central unit responsible for the strategy and coordination,

- interdisciplinary: perhaps a key competitive advantage of University of Warsaw can be seen in its interdisciplinarity,
- differentiated: forms and methods of the cooperation should depend, among other things, on who formulates the offer, what are its contents and a scientific character, and
- gradual: the cooperation should develop gradually, step by step, starting with segments recognized as priorities.

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