# How to Be an Entrepreneurial University

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**Abstract**

*To be an entrepreneurial university nowadays seems to be an attractive, convincing, modern vision for many higher education institutions and their leaders.*

*The article goes through reflections on who will say what to whom when using the expression "entrepreneurial university" and it will show that there are at least four debates about entrepreneurial challenges to universities.*

*The first debate has to do with the production of knowledge and directs our attention to the changing mode of the production of knowledge. The other debate is looking at the changing position of knowlegde-producing institutions and their interrelationship: the "Triple Helix" debate. The third debate refers to a demanding balance between the global and the regional mission of a university. The fourth debate can be seen as a reflection on the consequences of the first three debates: the employability debate.*

*The final remark has to do with the danger of being misled by the careless use of the expression entrepreneurial without recourse to its semantic aura and connotations.*

**Keywords:** *Production of Knowlege, Mission of the University, Employability Debate, Semantic Aura.*

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## 1. Different Approaches

To be an entrepreneurial university nowadays seems to be an attractive, convincing, modern vision for many higher education institutions and their leaders. Some of the universities´ leaders even seem to think that they have to develop some sort of entrepreneurship if they want to steer their institution towards a successful future in the competitive world of higher education. But speaking about an entrepreneurial university does not necessarily have the same meaning to everybody.

So I would like to go through some reflections on who will say what to whom when using the expression "entrepreneurial university". In doing this I will try to draw some lines of recent changes or challenges in the world of teaching and research, which will hopefully meet at a point which characterises the entrepreneurial university.

On the one hand, developing an institution of higher education towards entrepreneurship is, as I see it, an active policy of the institution trying to distinguish itself from other competing ones. On the other hand, entrepreneurship is an answer to changes inside and outside the university, which can´t be managed without some sort of activities new to the tradition of the university and the academics working inside. This means that they will have to adapt to some attitudes of private enterprises unfamiliar to the scientific community. When you look closer at recent university programs or programmatic speeches of university leaders you will very quickly learn that there are at least three different approaches to the term entrepreneurial university.

To act as an entrepreneur in the market like a private business can include and does actually include a lot of activities, like for example: offering education and research in a competitive market, looking more for business opportunities than for academic values; selling services like counseling or adult education, making money out of intellectual property, like inventions, patents, journals, courses. These activities are performed in a competitive way and as part of the core business of the higher education institution and not just as a side effect of teaching and research. You can add to this list of activities which are close to the academic world other types of market oriented businesses like running hotel or congress center, sports facilities, cultural events and so on. An entrepreneurial university will do this by using its name as a brand and

would try to use these new fields as a means of expanding its market share in its core acivities, such as teaching and research.

Another approach is using the vision to be entrepreneurial in the field of higher education institutions in a more figurative way. The university has the intention of signalising to stakeholder inside and outside that it is on the way to develop intensive links to the outside world in contrast to the more introverted attitude of the traditional university. In this case, the challenge for all academics is to leave the "ivory tower", which means, to offer study programs which produce entrepreneurial graduates, to orient research to pressing problems of companies or society, to build an inner structure which is more management oriented, less collegial, more responsive to students, less paternalistic, looking more for products than for processes, developing external networks to local and regional stakeholders and trying to be an important partner for industry and (local and regional) government.

Not so far away from the latter approach is the notion of the entrepreneurial university as a set of values, which means, being innovative at all levels, looking for efficiency and effectiveness, using comprehensive ways of quality assurance, having a well structured decision-making process and a powerful leadership, but still concentrating on teaching and research independent of the outside world, thus emphasizing the autonomy of the university.

Entrepreneurship is a catchword of our time. It is used to activate young people, to push small business, to deal with unemployment, to characterise the need of growth, to challenge the national economy. The idea behind it is empowerment, motivation, creativity and courage, and it would be surprising if it were not also deployed by higher education institutions. By using this expression, fashionable university presidents are trying to reshape their institution and find a way to be accepted by CEOs in industry and politicians. But there is also a more serious background to this, which I will discuss below.

## 2. Can an Institution Be an Entrepreneur?

Cambridge Advanced Learner's Dictionary presents the definition of an entrepreneur as someone who starts their own business, especially when this involves risks.[1] According to Röpke, "the concept of entre-

1- http://www.freesearch.co.uk/dictionary/entrepreneur

preneurship has a wide range of meanings. At the one extreme, an entrepreneur is a person of very high aptitude who pioneers change, possessing characteristics found in only a very small fraction of the population. At the other extreme of definitions, anyone who wants to work for himself or herself is considered to be an entrepreneur."[2] Nearly all who discuss entrepreneurship refer to the Austrian economist Joseph Schumpeter and his definition of entrepreneurship.[3]

What he and his school are looking at is an explanation as to why, where and when innovation happens in a stable environment, why some companies are successful and why economic growth sometimes emerges and sometimes not. It is an astonishing phenomenon that at some point in time, in a particular place, with special people, something new like a new product or a new process is introduced into the market effectively. And an explanation for this is being looked for not just out of curiosity but to find the best way to stimulate people to become innovative.

We have to remember that Schumpeter's concept of explaining economic development concentrates mainly on individuals and their behavior in the field of business. However, he was also using the idea of corporate entrepreneurship which stresses the entrepreneurial function of the organization and the importance of dispersed entrepreneurship. So when we talk about the university as an entrepreneur we turn away from the entrepreneur as an individual, who is in the center of most of the definitions, to an entrepreneurial organization and its peculiarities.

For this reason, a short look at the use of the term "entrepreneurship of corporations" would be helpful. Are University leaders right when they claim to run an entrepreneurial institution, or is this a form of employing a concept which is not in use in the world of private corporations. As Becker and Knudsen showed in a recent survey of literature, there is a widespread and even growing transfer of the concept from the individual level to the level of organizations.[4] This transfer implies: "that entrepreneurship, understood as a propensity of an individual to behave creatively, can be held in two ways: individually or dispersed (in the form of team entrepreneurial resources). The discussion of which characteristics describe entrepreneurship at the corporate level largely overlaps with those at the individual level:

2- Röpke, Jochen (1998)

3- Schumpeter, Josef A. (1928)

4- Becker, Markus C. / Knudsen, Thorbjørn (2004)

autonomy, innovativeness, risk taking, proactiveness, competitive aggressiveness.

At the corporate level, too, entrepreneurship has been distinguished from management."[5]

Looking at theories and empirical studies about entrepreneurship with respect to private business and private corporations, you can't avoid admitting that the higher education sector is trying to make use of a concept coming from outside and not from inside the academic world. The overall descriptive intention of this concept is to explain innovation and growth. The prescriptive intention is to offer ways for individuals and organizations to be more entrepreneurial. Disciplines of economics, history, political science, psychology, and sociology are included in this debate. Evidence shows entrepreneurs and forms of entrepreneurship are path-dependent, and vary over time and from region to region. It therefore seems to be wise to include history and impacts of cultural, social, and economic change to get a full picture when analysing or making useful proposals.

### 3. New Challenges in the World of Higher Education

I am going to give a short insight into four ongoing debates in order to explain that the concept of an entrepreneurial university is not just an idea of university leaders or of educational policy-makers who are only showing a modern attitude and using a sophisticated language. This leads to the changes in the function of teaching and research which are being discussed at present.

The first debate has to do with the production of knowledge and directs our attention to changing mode of the production of knowledge, known as the mode 1 mode 2 debate. The other debate is looking from a slightly different, angle at the changing position of knowledge-producing institutions and their interrelationship: the "Triple Helix" debate. The third debate refers to a balance between the global and the regional mission of a university. The fourth debate can be seen a reflection on the consequences of , above which are primarily research oriented for teaching learning: the employability debate. Being aware of these changing in society with respect to teaching and research, individual academics, graduates and universities you can really talk a "dem-

5- op. cit. p. 8

and-response imbalance"or a "demand overload" which is facing the universities, as Burton R.
Clark[6] has put it: "Self-defining, self-regulated universities have much to offer. Not least is their capacity in difficult circumstances to recreate an academic community. Toward such universities, the entrepreneurial response leads the way."[7]

### 3.1. Mode 1 and Mode 2 Research

In recent years studies about production forms of knowledge are showing that research is opening up to needs and demands from the economy, technology and society, whereas innovations in technology, economy, and society are more and more based on scientific knowledge. A new form of knowledge production emerges as a result of these structural changes: knowledge is no longer seen as an isolated part embedded in the linear sequence of basic research, applied research and how it is used, but emerges in the context of application and application demands. Gibbons et al. coined the formula in the title of their very influential book, "New Production of Knowledge"[8]. They described a new application-oriented knowledge production and called it 'mode 2', in contrast to traditional, linear academic knowledge production, called 'mode 1'. If researchers and institutions want to contribute more and more to problem solving, they have to be much more transdisciplinary. With the new production of knowledge the purpose of science automatically changes, meaning that research is no longer just devoted to the accumulation of knowledge, but is actually seeking practical application. Researchers should act in accordance with the objectives of society and organisations. The outcome of research should follow criteria not only based on intra-scientific values, but also on extra-scientific ones. It should not only be assessed by the peers of the respective discipline, but also by professional managers of the employing organisation. Mode 2 does not mean, research should be done outside the university. Despite the fact that research will be performed by academics within institutional boundaries, the challenge will be to acquire external sources of finance and to strengthen external links with enterprises or regional authorities.
Whether or not this shift in knowledge production can really be empirically tested, or you could find a mixture of both modes in the past, this debate nevertheless questions the role of higher education institutions

6- Clark, Burton R. (1998) p. 6 7- op. cit. p. 15 8- Gibbons, M. et. al. (1994); Scott, P. (1997)

nowadays with respect to their future mandate.
The following table gives a broad impression as to what the differences are between research according to mode1 and to mode 2.[9]

**Table 1: The differences between research according to mode 1 and mode 2**

| Dimensions of Analysis | Old Knowledge Production | New Knowledge Production |
|---|---|---|
| Attitude towards scientific structure | Based on a single discipline | Trans-disciplinary– involving diverse range of specialists |
| Attitude towards problem formulation | Problem formulation governed by interests of specific community | Problem formulation governed by interests of actors involved in application |
| Attitude towards problem handling | Problems set and solved in (largely) academic context | Problems set and solved in application-based context |
| Accepted theory | Newtonian model of science specific to field of enquiry | Emergent theoretical/conceptual framework not reducible to single discipline |
| Preferred methods | Research practice conforms to a discipline's definition of what is 'scientific' | Research practice is reflexive and socially accountable |
| Organization of research | Quasi-permanent, institutionally-based teams | Short-lived, problem-defined, non-institutional teams |
| Structure of co-operation | Hierarchical and conservative team organisation | (Non) hierarchical and transient team organisation |
| Expected outcome | Normative, rule-based, 'scientific' knowledge | Consensual, continuously negotiated, knowledge |

9- Using elements of the table presented by Ian Cooper, BEQUEST and 'the new production of knowledge'. http://research.scpm.salford.ac.uk/resources/ lisbon/ papers/ian.pdf

**Continued:**

| | | |
|---|---|---|
| Definition of innovation | 'Innovation' seen as production of 'new' knowledge | 'Innovation' also seen as reconfiguration of existing knowledge for new contexts |
| Attitude towards application | Separate knowledge production and application | Integrated knowledge production and application |
| Networking | Dissemination through institutional channels defined by disciplines | Dissemination through collaborating partners and social networks |
| Dominant research practice | Static research practice defined by 'good science' | Dynamic research practice characterised by on the move problem solving |
| Inclusion of practitioners | Static research practitioners operating within discipline/institution | Mobile research practitioners operating through networks |

### 3. 2 . "Triple Helix" as a Symbol for Modified University-Industry-Government Relations

If one goes a step further from the "New production of knowledge" to questioning the institutional arrangements between the university as a producer of knowledge and government as well as industry as potential users, one will find oneself in the middle of a debate called the "Triple Helix". The interface between universities and industry has attracted more and more attention in the last few years as they have looked for factors to improve the economic position of a nation or a region. New knowledge has been increasingly seen as a factor of economic growth, a source of new products and processes. Companies are eager to identify potential external research providers and they are trying to add external sources to their own R&D. Universities are being more and more involved in the transfer of technology: licensing their new knowledge to external sources, founding new firms on the basis of technologies created by research of academics or students to give just some examples.

At the same time government is setting a new framework for both sides to push foreward what is seen as an important help to the economic growth of the country. The expression "Triple Helix" was coined to describe the non-linear process of changing relation: "There are four dimensions to the development of the "Triple Helix" model: the first is internal transformation in each of the helices; the second is the influence of one helix upon another; the third is the creation of a new overlay of institutional structures from the interaction among the three helices; the fourth is a recursive effect of these entities, both on the spirals from which they emerged and on the larger society. Among the effects, the degree to which academic industrial collaboration changes the role of the university as a source of disinterested expertise must be examined."[10]

A series of conferences starting in Amsterdam (1996), followed by meetings in New York (1998), Rio de Janeiro (2000) and in Copenhagen(2002) discussed the existing institutional divisions between universities, industry, and government agencies asking questions like: "How can the regional research capacities be recombined innovatively?[11]" explain the potential benefit of focusing on the "Triple Helix" for the development of higher education and universities in the following way:

"First, the model can be used in case study analysis. Given the new mode of knowledge production, case studies can be enriched by raising the relevance of the three dimensions of our model. This does not mean that we disclaim the legitimacy of studying, for example, academic-industry relations or government-university policies, but one can expect more interesting results by observing the interactions of the three subdynamics. These subdynamics are: (1) economic exchange relations, (2) the organized production of novelty, and (3) the normative control mechanisms at the relevant interfaces. ...

Secondly, the model can be informed by the increasing understanding of complex dynamics and simulation studies from evolutionary economics. ... The "knowledge base" of the economy can thus be operationalized, in principle. How does a knowledge-based economy oper-

10- Etzkowitz, Henry / Leydesdorff, Loet (1998)

11- Etzkowitz, Henry / Leydesdorff, Loet, Can "The Public" Be Considered as a Fourth Helix in University-Industry-Government Relations? Report of the Fourth Triple Helix Conference, Science and Public Policy (forthcoming) 2004

ate differently from an industry-based one, and why? These questions can be addressed from the Triple Helix perspective because the operation of an overlay is declared. The overlay can be expected to self-organize as another control mechanism within the complex dynamics from which it emerged.

On the normative side, Thirdly, the Triple Helix model provides us with the incentive to search for mismatches between the institutional dimensions in the arrangements and the three social functions carried by these arrangements. ... Conflicts of interest can be deconstructed and reconstructed, both analytically and then perhaps also in practice in an uphill search for innovative solutions to problems of productivity and knowledge growth."

An excellent example in Europe for a strategy using the "Triple Helix" philosophy can be seen in the Lisbon declaration: An extraordinary European Council was held in Lisbon in 2000 with the aim of strengthening employment, economic reform and social cohesion in the new "knowledge-based economy". At this conference the EU set itself a most demanding strategic goal for the next decade: to "become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. Achieving this goal requires an overall strategy aimed at:

preparing the transition to a knowledge-based economy and society by better policies for the information society;

research and development, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market;

modernising the European social model, investing in people and combating social exclusion;

sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix.

This strategy is designed to enable the Union to regain the conditions for full employment, and to strengthen regional cohesion in the EU."[12] In March 2000, as a result of the Lisbon Declaration, the European Council adopted 3 strategic goals (and 13 associated concrete objectives) to be attained by 2010, and it approved a detailed work programme

12- Presidency Conclusions Lisbon European Council 23 and 24 March 2000. http://ue.eu.int/en/Info/eurocouncil/index.htm

("Education & Training 2010") for the attainment of these goals. It is worth quoting what the EU Commission expects from universities:

"Significant though it may be, this progress must not cause us to forget that the place of higher education in the overall Lisbon strategy goes far beyond the programme of structural reform initiated by the Bologna declaration. The role of the universities covers areas as diverse and as vital as the training of teachers and that of future researchers; their mobility within the Union; the place of culture, science and European values in the world; an outward-looking approach to the busainess sector, the regions and society in general; the incorporation of the social and citizen-focused dimensions in courses."[13]

We will see these challenges as an example of what is explained by the "Triple Helix". We can learn from this, that if a university follows the line of the Lisbon Declaration it will have to change dramatically and behave in a way uncommon to the traditions of the academic profession. As Leydesdorff puts it: "Our argument was that social configurations cannot be expected to stabilize. A knowledge-based regime of innovations remains in transition. The Triple Helix model is then sufficiently complex to encompass the different species of observable behaviour."[14]

### 3. 3. University's Involvement with the Region

Parallel to the dicussions about the contribution of universities to the overall economic growth is a debate going on concerning the special functions of a university within its region. As an example: The geographical distribution of newly founded higher education institutions (universities and Fachhochschulen) in Germany during the period of expansion around 1970 was conducted, bearing the regional needs in mind. It was seen as a very important mission of these new institutions to serve the needs of the region and not just those of the future regional students. Since this period of rapid higher education growth interest in the regional role of the university, in civic involvement and volunteering has been strong and is still rising.

13- Communication from the Commission - Education & Training 2010. Draft joint interim report on the implementation of the detailed work programme on the follow-up of the objectives of education and training systems in Europe). {SE(2003) 1250},summary.http://europa.eu.int/eurlex/en/com/cnc/2003/com2003_0685en01.pdf,p.8

14- Leydesdorff, Loet (2002) p. 3

Whilst it might be possible to identify passive impacts of universities in terms of direct and indirect employment, it is not so easy to mobilise the resources of universities to actively contribute to the development process. Since development has a strong territorial dimension - national objectives can only been achieved by realising the full potential of its regions - Universities are being required to make a contribution in their respective regions. Empirical evidence has been collected about the efficiency and effectivness of such a mission[15]. Current developments in the nature of the funding of universities, and specifically the unbundling of funding streams around specific roles and tasks are playing an important role.

Also the growth of academic global competition is a factor to develop close and supportive relations at the local level for seeking alliances with regional bodies to strengthen their competitive power. Regional bodies are using strong competetive universities to attract investment and a qualified labour force.

It is an important part of regional activities to create strong relations between the university and the region and to enter into a dialogue with various stakeholders in the regional development process. These include:

- local and regional political authorities;
- employers and employers organisations (e.g. chambers of commerce);
- non-governmental organisations in the political, social, and cultural sphere;
- other parts of the education system like schools and colleges;
- recent graduates, present and prospective students.

So irrespective of the fact that universities don't have a defined territory they are forced to work together with regional institutions and must focus on regional needs, especially the needs of the region's labour market. And not only is the regional aspect of the labour market is of importance, also the specific structure of the industry in the Region. Traditionally, universities produce graduates for a labour market dominated by large employers because they dominate the demand at the national level and therefore the public policy in higher education. Small and medium sized industry plays a mayor role in innovation and the creation of new jobs. However, the higher education policy and the uni-

15- Etzkowitz, Henry (2004)

versities have neglected the regional labour market and the demands of this side of industry.

Regions with badly developed structural conditions, e.g. weak industry, low educational level, high unemployment and problematic public health are even more in need of co-operation with regional universities. Co-operation is the key factor to helping each other to create what you find in structurally strong regions, like institutional arrangements and structural resources as prerequisites of economic and social development. Instead of being the cause of the brain drain, which only benefits the best economic centers, it is even more important to use the universities with their intellectual capacities and their power of innovation to stabilise and develop the regions locally.

### 3. 4. Employability of University Graduates

The first and the second debate - "New production of knowledge" and "Triple Helix" -concentrate on research as a core business of universities. The regional debate includes research and teaching, which are both challenged by the needs of the region. The fourth debate I would like to touch on deals with the challenges in teaching at universities.

The Sorbonne Declaration stated: "We hereby commit ourselves to encouraging a common frame of reference, aimed at improving external recognition and facilitating student mobility as well as employability." What does this mean? Are graduates nowadays not employable enough? Can we reduce unemployment by a new structure of higher education? Do we have to make degrees more compatible with professions? Are we missing competencies in the traditional curricula which are necessary in the working world?

A strategic paper for higher education explained the goal in the following way: "Employability is about making closer links between education and the world of work."[16] We all agree that taking part in a study programme should lead to an outcome which enables the students to solve problems or to understand the world or to fulfil duties or to master a situation better than before. We expect some sort of learning outcomes and by learning outcomes we mean the set of competencies including knowledge, understanding and skills a learner is expected to

16- Universities UK: Enhancing employability,recognising diversity. Making links between higher education and the world of work, p. 6. ht tp://www.universitiesuk.ac.uk/bookshop/downloads/employability.pdf

know/understand/demonstrate after completion of a process of learning, whether short or long. Learning outcomes can be identified and related to whole programmes of study (first or second cycle) and at the same time for individual units of study (modules).

Competencies can be divided into two types: generic competencies, which in principle are subject independent, and subject specific competencies. Competencies are normally obtained during the whole study programme as well as from its environment (the hidden curriculum).

For all who have to develop and deliver programmes it is essential to know which part of the study process imparts the various competencies. It goes without saying that competencies and learning outcomes should correspond with the final qualifications of a learning programme. But all the administrators, designers and researchers in higher education can easily see how limited the systematic knowledge about the process of teaching and learning and its outcome is. It would be presumptuous to prescribe to all individuals and institutions the one and only best way to optimize learning outcomes simply because we don't have enough reliable insight.

"The consideration of education for employment needs to run parallel with education for citizenship, the need to develop personally and to be able to take social responsibilities."[17] When we ask for more employability we have to bear in mind, "that a clear match between field and level of study, on the one hand, and a certain occupational category on the other hand, is not the norm, but rather an exception. ... A vast number of different terms were invented over the decades to make us aware that social action on the job is not just based on having acquired certain areas of knowledge. We often read terms such as generic skills, key qualifications, social competencies; work attitudes ... Higher education can foster these competencies less directly than knowledge. We do not know well which substances and processes of teaching and learning foster these competencies most successfully. "[18]

Due to two aspects, it is difficult to enhance employability according to the Sorbonne Declaration:

- It is not really clear what is meant by this objective: is it enough to

17-http://odur.let.rug.nl/TuningProject/documentos/ Tuning_phase1/ Part_ONE %20page %2017a55.pdf, S. 31

18- Teichler, Ulrich (2004) p. 6

fulfil the normal assignments of a job, or should we be trying to reduce the time taken to find a job, or are we trying to create more innovative people or...it is not clear to what extent the mission of universities should be reoriented,

- from a position more or less remote from the actual needs and the dynamic changes of the labour market to a position where the university can adapt quickly,
- from a diversity based on different cultures and traditions to a homogeneity based on the demands of a global economy?

But the challenge of producing a higher degree of employability will necessitate our thoroughly reconsidering the outcomes of study programmes not just from an academic point of view, but more from the perspective of the student and his or her future and from the perspective of the society as a whole.

### 3. 5. The Entrepreneurial University as a Proactive Institution

The debates I was trying to outline here have in common that the universities are forced to notice the changing environment, the changing demands, the changing conditions. I will refer to a university as being entrepreneurial when it is proactive, which means that it does not just wait until the pressure makes adaption unavoidable but accepts that the university´s mission should be to play an active role in the changing world. Without such a self-conception it would be difficult, even impossible, to maintain academic values. But without maintaining the specific values of the university as an autonomous body it woud be very unlikely that the universities would be able to make a substantial contribution to the cultural, social, and economic development of the nation.

This is a risky endeavour for the academic world as it has been: traditionally educated more for the "ivory tower" than for the competitive political and economic sphere, bound by a lot of rules and regulations, dependent on financial resource from government, often based on good conduct. Traditionally, universities are burdened by the expectations of the past and a laborious internal decision-making structure.

The fact that change happens in these circumstances can be referred to as acting entrepreneurially, and any university sucessful at this can be called an entrepreneurial university.

## 4. How to Become an Entrepreneurial University?

### 4. 1. Clark's Concept

The most important contribution to the idea of the entrepreneurial university, which one will find in higher education research is presented by Burton R. Clark.[19] His starting point is the high pressure on universities to change. Clark defines four different sources:

- the increase of the number of students,
- the demand to be trained at universities for highly specialized professions,
- more outcome for less money, and
- the dramatic expansion of knowledge.

The consequence of "these four broad streams of endless demand" is, as Clarke calls it, a demand overload. He tried to find out if there are ways for universities to bring their responses into reasonable balance with the demands. To find empirical evidence for his recommendations he looked very closely at five higher education institutions in five European countries. His intention was to exemplify strategies for finding such a balance. Behind his selection one will not find a special theory or method, but the well-based experience of a much valued expert with lifelong preoccupation with higher education and universities.

Clark's assumption is that the required active mode of a university does not come from single faculties or departments. An overall organizational realignment of the university seems to be necessary, the acceptance of an integrating administrative backbone and the capacity for integrated planning and acting together with stronger lines of authority from the rector down to the basic units.

For this reason, Clark´s starting point is the "strengthened steering core" of a university, bringing together new managerial values with traditional academic ones, while involving all the faculties and academics. His second point is the "enhanced developmental periphery", building new units to bridge the gap between university and its environment. It goes without saying that the funding of the university becomes more stable the more it tries to diversify its funding base. But in order to develop such diversification a collective will is needed, which is also needed to distribute the money between the different units. Thus, in Clark´s own words "cross-subsidy becomes the

19- Clark, Burton R. (1998, 1998a)

financial heart of University integration". His two other points - "the stimulated academic heartland" and "the entrepreneurial culture" - are dealing with the problem that the traditional university is more of a loosely coupled system than a focused unit. So Clark concluded[20]:

"The entrepreneurial response offers a formula for institutional development that puts autonomy on a self-defined basis: diversify income to increase financial resources, provide discretionary money, and reduce governmental dependency; develop new units outside traditional departments to introduce new environmental relationships and new modes of thought and training; convince heartland departments that they too can look out for themselves, raise money, actively choose among sustainable specialties, and otherwise take on an entrepreneurial outlook; evolve a set of overarching beliefs that guide and rationalize the structural changes that provide a stronger response capability; and build a central steering capacity to make large choices that help focus the institution."

### 4. 2. Etzkovitz's Five Propositions and Three Stages

Henry Etzkovitz has discussed the concept of entrepreneurial universiy and its critique from a different perspective. To manage the inherent conflict of interests in a productive way he suggests five propositions for those who are developing an entrepreneurial university[21]:

- *Proposition1: capitalisation.* Knowledge is created and transmitted for use as well as for disciplinary advance; the capitalisation of knowledge becomes the basis for economic and social development and, thus, of an enhanced role for the university in society.
- *Proposition2: interdependence.* The entrepreneurial university interacts closely with the industry and government; it is not an " ivory tower" university isolated from society.
- *Proposition3: independence.*The entrepreneurial university is a relatively independent institution; it is not a dependent creature of another institutional sphere.
- *Proposition4: hybridisation.* The resolution of the tensions between the principles of interdependence and independence are an impetus to the creation of hybrid organisational formats to realise both objectives simultaneously.

20- Clark, Burton R. (1998) p. 14

21- Etzkowitz, Henry (2004) p 66

■ *Proposition5: reflexivity*. There is a continuing renovation of the internal structure of the university as its relation to industry and government changes, and of industry and government as their relationship to the university is revised.

More than just a decision is required to become an entrepreneurial university; in fact it is going to be a rather long and challenging way with many phases: The first phase is to shift the attention so that "the academic institution takes a strategic view of its direction and gains some ability to set its own priorities, typically through negotiations with resource providers". In the second phase "the academic institution takes an active role in commercialising the intellectual property arising from the activities of its faculty, staff and students. In a third phase, the academic institution takes a proactive role in improving the efficacy of its regional innovation environment, often in collaboration with industry and government actors."[22]

### 4. 3. Dimensions of Challenges

Taking reality as it is, it will be difficult for a university to become an entrepreneurial entity for the following reasons: a small range of institutional autonomy, very close ties to the state and the resulting high degree of regulation by the state, having academics with little or no external experience, few and limited financial opportunities and therefore limited research facilities. At the same time the institution has to act in many directions.

A strong leadership has to get the institutional capacity to set internal and external agendas and to push new ideas forward. A sort of brinkmanship is necessary to find a balance between a considerable degree of independence from the state and industry, and at the same time handle a high degree of interaction with these spheres.

Proactivity needs collaboration within and between the different levels of the education system, including schools and colleges, between the educational sector and labour market, between local und regional government and universities. An entrepreneurial university has to create a network and has to be the most creative partner in this network.

22- op. cit.

It has to contribute to economic, technological, environmental, social, cultural and political agendas across a broad front, not least by highlighting the interconnections across these various areas. Partnerships need to move beyond the identification of additional sources of funding to dialogues which affect the behaviour of participants.

A new human resource program has to loosen the ties to government by giving up the civil servant status of the university`s work force. This program has to look for administrators and teachers with new skills and to develop a mutual understanding of the changing role of the university. Relevant skills include: networking; facilitation; working with different cultures; setting up projects; planning and contract management; raising financial support; personnel organisation; supervision and personel support techniques; insight into organisational policies and dynamics.

My last remark has to do with the danger of being misled by the careless use of language. Shall we, as university people, use the expression entrepreneurial without recourse to its semantic aura and connotations? As the term refers not only to being innovative but also to engaging in commercial activity, there will always be some danger when using this expression. However, as yet nobody has come up with a suitable catchword from the academic heartland to decribe what has to be done at universities. perhaps the use of the term will be interpreted in different ways: it could have advantageus connotations in communication with people outside the university whilst having the opposite effect with people inside. People in industry or government will not be irritated by the economic origin of the term, but inside, the usage can be counteproductive in creating more resistance than support for change.

Becoming an entrepreneurial university should not just mean becoming a profit-oriented enterprise but has to include the reorientation of professional roles and identities, the preservation of academic values in a new environment and more openness to the needs of the society.

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