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#15. Definition of an Entrepreneurial University [1]

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Introduction

An entrepreneurial university, defined in terms of culture, mission and regional role, assists the transition to a knowledge based society (Balconi, 2009). The entrepreneurial university builds upon and extends previous academic missions of teaching and research by including training in entrepreneurship in the curriculum, and by expanding the remit of research to include exploration of the practical outcomes of discovery. The entrepreneurial remit influences how the traditional missions are carried out, and positions the university to play an expanded role in innovation. Beyond interacting with existing firms, the core of the entrepreneurial university is its commitment to encouraging firm formation from existing knowledge that the university aggregates, as well as new knowledge that it creates and transmits through its research and teaching missions.

Entrepreneurship is the *vita activa* of innovation, an expression of the human need to seek improvement in all endeavors. It is a broader foundational activity than simple business risk taking, and appears in all areas of society expanded the actors from individual to organizational and different types of entrepreneurship have been identified e. g. Institutional, Commercial and Social. Taking entrepreneurship beyond the existing societal framework, institutional entrepreneurs create alternative rules and logics in contrast to moral entrepreneurs who act to reinforce traditional social norms e.g. Prohibition.

My interest in the morphology of entrepreneurship began during PhD studies in the humanistic underground of American Sociology at the New School for Social Research, upon returning from Nigeria after a two-year stint as a teacher in the Bornu Provincial Secondary School in Maiduguri. We called it Institution-Formation Sociology, a concept for participant intervention to address societal challenges. My PhD was on social entrepreneurship: the Bedford Stuyvesant Community Cooperative Center, a dissertation completed in 1969, well before the field was invented. Applied sociology had originated in the late nineteenth and early twentieth century, entrepreneured by Jane Adams at the Hull House project in Chicago. This activist strand emerged in tandem with the first department of sociology at the University of Chicago. However, social amelioration was not included in sociology’s era of discipline formation. As it happened, social entrepreneurship eventually arose almost a century later, as a legitimated academic field in Business Schools rather than from Sociology departments.

Definition of an Entrepreneurial University

An *entrepreneurial academic transformation* is underway with profound implications for the

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university's role in society at several levels. Most fundamentally, the university, as the institution for the production, application and dissemination of knowledge, involves faculty viewing their research and teaching, in a new light, seeing that they can contribute to economic and social development as well as to education of youth and advancement of knowledge. For students, it entails learning how to organize projects that utilize various kinds of resources as well as master disciplinary knowledge. For administrators, it means developing capabilities for knowledge and technology transfer. An "inner logic" of academic development expands the university's remit from a conservator to an originator to an entrepreneur of knowledge. In a professor's discussion with students, teaching bleeds into research when new ideas for investigation are conceived. Research implies entrepreneurship, both in securing the resources to support research and in brainstorming the innovation potential of a finding. Conversely, entrepreneurship feeds back into traditional academic practice by providing new research themes and teaching examples.

With the advent of the knowledge economy, capital and academics have become increasingly intimate. The university is an especially propitious site for innovation due to such basic features as its high rate of flow through of human capital in the form of students who are a source of potential inventors. Government research institutes and firm R&D laboratories have the advantage of a larger scale of resources. The university's advantage in the production of novelty is encouraged by the admission, education and graduation sequence. A university technology transfer officer said that, "Each year I have 3,000 new inventors" (the students intake). Not that it was meant literally, but it was the potential for invention coming from an educational process. The basic academic principles of admission and graduation that structures the student experience mandate a limited time span. The flow through of persons insures a continual input of new ideas and perspectives as well as their output and transfer to other universities and societal spheres where students move upon graduation. Entrepreneurship is the fulfillment of the university's nature as a producer of novelty. Some of this novelty has practical implications that may be captured for institutional and personal gain, as well as to enhance regional and national competitiveness through creation of new industries and firms.

Every university has the potential to be entrepreneurial, although strategies and paths to realize it differ depending upon the starting point. A teaching university may start by offering courses in entrepreneurship and establishing incubator facilities to start firms utilizing existing knowledge. The university may then initiate research, based on regional needs, to expand its source of entrepreneurial activities and thus begin the transition to a research university on an entrepreneurial base. A research university may develop internal capabilities for technology transfer and commercialization of research. Moreover, the university may participate in organizing cooperative innovation projects. In the following, we shall explore the research-based entrepreneurial university as a new conception, not only a phenomenon, with the specific definition, characteristics and norms and preconditions.

We define an entrepreneurial university as a university which responds to direct economic demand in its region; its mission extends to commercial/entrepreneurial activities among university, industry, government, such as firm-formation (startups), technology/knowledge transfer, entrepreneurial education, combined, with traditional teaching and research. Seeking the practical as well as theoretical implications of knowledge, the Entrepreneurial University completes a virtuous circle through training programs in innovation and entrepreneurship.

First of all, it must be a university, including all missions of a traditional university; and keep independence as a higher educational institution. Such a university is playing a more fundamental role as an institutional mechanism of change in economic and social development. Various types of

incubators associated to the university acquire a strategic importance. It has been noted that some firms succeed in the face of limited resources making do with whatever resources are at hand. Industry is relatively modestly involved in this academic transformation, contrary to presumptions of some that industry is driving the academic entrepreneurial transition. Rather, it is largely an internal dynamic, with some impetus form government seeking public benefit. Most fundamentally it arises from (1) the nature of knowledge, a "polyvalent" with dual theoretical and particlepracticla potential, and (2) the organizational development of academia that shares common characteristics with business and government, such span of control strictures.

Secondly, it must be "entrepreneurial". What makes the university distinctive as an entrepreneur is its ability to build upon its previous missions of shaping Human Resources, and creation of new knowledge. It also has the ability to shape new entrepreneurs through its educational activities and develop new objects for entrepreneurial projects through its ability to foster invention as an offshoot of its research activities as well as from recombining elements of existing knowledge. The paths of university development may take different courses from teaching or research, public or private university, and result in various mixed formats. Such a university is also distinctive as an entrepreneur due to the breath of its knowledge and Human Resources as a consequence of its general mission to focus on various areas of knowledge. Whereas firms are driven to specialize and focus on core competencies, universities are motivated to extend into new areas as a core development strategy.

Thirdly, the entrepreneurial university follows an interactive model of innovation with government and industry, incorporating linear and reverse linear modes. The original idea was that simply by putting in the research funds - typically by government at one end - then the results would be published and industry would take them up. Now we know it's not so simple a process. Of course, knowledge transfer takes place through publications and graduates, but a more systematic series of mechanisms is required to improve the performance of linearity. There should be people with expertise in transfer on both sides of the equation, on the university side with industrial expertise to find partners in industry, and on the firm side with academic expertise to search universities for useful knowledge and technology. It is necessary to have these capabilities in place on both sides of the academic- industrial divide to have the lateral process work well, through the university-industry-government triple helix.

Fourthly, the entrepreneurial university is the next stage in the development of a unique institution that spans the medieval and post-industrial eras, not a novel thing, but a greater ivory tower!

It retains the feudal master-apprentice relationship in its PhD program, the research seminar for honing new ideas, and the lecture hall of mass undergraduate education, supported by graduate teaching assistants. These various activities that also serve as a source of firm formation projects, are aligned in an entrepreneurial university model. Courses and modules are designed to train students in entrepreneurial skills that may include experiential components ranging from simulation to real projects with financial resources at stake. Teaching, research and entrepreneurship each infuse the other. Rather than a depredation of previous educational and research missions, the entrepreneurial university builds upon and includes the Newmanian and Humboldtian models in a synthesis of liberal arts education and fundamental research with innovation responsibilities (Haynes, 2018). Indeed, an enhancement of academic performance, arising from entrepreneurial activities (i.e. a "more the more" hypothesis rather than a subversion of academic institutions, is posited.

And fifthly, the entrepreneurial university places economic and social development as a third academic mission on a par with its traditional teaching and research missions and encourages dual roles in academic and non-academic institutions making boundaries porous. It enhances economic performance based upon existing knowledge that the university collates, and new knowledge that it creates. Instead of displacing one goal by another, the entrepreneurial university pursues multiple goals simultaneously. Knowledge has become increasingly important as a means of wealth creation, even as it remains a revered end in itself. However, expectation that the university will become a " handmaiden of industry" if it engages with firms is based on an outmoded conception of the university in society. The Enlightenment thesis is that unfettered investigation guided by researchers ' imagination will produce the most useful practical and public benefits. A university innovates through new interdisciplinary projects, drawing upon and pr eserving the past in its disciplinary departments. While universities may reduce teaching loads in order to allow faculty members more time for research; there is a strong presumption that engagement with students is still expected.

Moreover, working with students is a key to intellectual advance and entrepreneurial project development, thus helping insure a balance among missions. The difference with the "ivory tower" research university vision lies in who should take responsibility for putting ideas into practice after they are generated. In the entrepreneurial model, some of that responsibility rests with the university. In the ivory tower model, such engagement is seen as having the potential to corrupt the university. A combination of Enlightenment goals and entrepreneurial objectives is the basis for the creation of a university relatively independent of its stakeholders, but always subject to a degree of influence from them. Degrees of freedom and intensity of involvement is influenced by the diversity of academic cultures and rules of engagement specifying appropriate behavior. Collecting a multiplicity of private donors and public supporters, and generating income from the knowledge the university produces, is a strategy for academic independence that originated in the US and spread globally.

The entrepreneurial university is an efflorescence of embryonic characteristics that exist 'in potential ' in any academic enterprise. The stages of entrepreneurial academic development usually occur in the order of Teaching → Research → Entrepreneurship, but they may also take place in any sequence or even virtually simultaneously as the university as turns its intellectual resources towards creation of economic results from knowledge as well as knowledge for its own sake. Although they were identified as taking place sequentially in the development of the Massachusetts Institute of Technology (MIT), nonlinear and even reverse sequences may be identified. Thus, the transition to the entrepreneurial university can also take off from a teaching as well as a vocational and technical college.

CONCLUSION

Just as capitalism has been deconstructed into distinct varieties; varieties of entrepreneurial university may be specified according to their commercial, social, and humanistic objectives. Therefore, there are arts-based entrepreneurial universities as well as science and engineering oriented foundations. In contrast to the varieties of capitalisms that persist as separate species, the varieties of entrepreneurship' s intermingle and cross-pollinate. The Ashland case illustrates the intersection of various entrepreneurial strands as well as a form of collective entrepreneurship, undertaken by a community to enhance its quality of life that we have called civic entrepreneurship. In the Ashland case, academic entrepreneurship begat civic entrepreneurship that begat cultural

entrepreneurship, that led to economic entrepreneurship. The multiple dimensions of entrepreneurship created the Ashland arts and humanities cluster within the context of a triple helix of university (teaching college) Industry (theatre festival) and government (Ashland municipality) relations.

As knowledge and technology transfer shifts from the periphery to the core of the university, new missions are found to enhance the old and vice versa. Faculty members find that their entrepreneurial activities provide vivid examples for their teaching practice as well as a source of research ideas. In an earlier era, research and teaching were found to be mutually beneficial in close association with each other. Scientific research, nurtured by the collegial atmosphere of societies and clubs, developed outside of the university. As each new mission is incorporated within the university, it provides a new source of support for the previous mission and influences how it is carried out. As students perform research tasks as part of their education, new knowledge is generated that may have useful and even commercial potential. Thus, research becomes incorporated in the teaching mission and teaching in the research mission. Similarly, economic development provides a new legitimation for the funding of research and contributes to expanding that activity.