

Innovative University and Entrepreneurial Ecosystem

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ABSTRACT

The era of entrepreneurial university is advancing the regional innovation ecosystem (RIE) in which universities exchange key resources with the ecosystem and play a major role in new industry creation. This paper examines the greater Boson area (from previous Route 128) in the U.S. to see how the social capital thinking over the past 20-year period has re-shaped Route 128 to evolve around the innovative universities in the region. We plan to suggest a future research agenda by setting up an RIE framework with focus on social capital and by proposing key measurement categories that can be applied to various universities in different regions.

Keywords: *Entrepreneurial ecosystem, University entrepreneurship, RIS*

INTRODUCTION

Entrepreneurial universities are advancing the regional innovation ecosystem in which they exchange key resources with the ecosystem and play a major role in new industry creation. The regional innovation system (RIS) concept along with the mainly knowledge/human resource generation role of universities within the triple-helix may not fully explain today's dynamic, regional innovation ecosystem (RIE) development led by some highly entrepreneurial universities.

Many RISs have attempted to become more entrepreneurship friendly by pursuing institutional transitions and getting rid of invisible barriers in the system. With the growing importance of social capital, such invisible assets in society are believed to advance regional development and innovation further. To make transition from a conventional RIS to an RIE focused on entrepreneurship, the importance of networks and social capital embedded in the ecosystem is emphasized for the creation and growth of new ventures. Entrepreneurs cannot succeed without the culture of trust in social capital, which helps overcome uncertainties and secure tangible commitments from stakeholders. This characteristics of social capital can be widely seen in the U.S., where investors, entrepreneurs and employees have learned to trust each other with eyes wide open for business impacts and opportunities rather than short-term returns. A good example is Tesla, which has

succeeded to secure a series of funds from investors without turning a profit yet. The company's market capitalization has continued to soar that its total value exceeds that of Ford.

In this short paper, we aim to examine the qualitative features of social capital in one entrepreneurial region and observe how it has attained a highly advanced ecosystem pivoting around entrepreneurial universities. In addition, we attempt to take a look at the quantitative dimensions of social capital with its connection with entrepreneurial university-region's outcome.

In short, we posit the following in this research:

- The role of social capital in a regional innovation ecosystem as additional factor of triple helix
- The role of such social capital on cultivating entrepreneurial university's growing impact in the ecosystem
- The measures of social capital include structural, relational and cognitive dimensions that can be measured for further study

REGIONAL INNOVATION ECOSYSTEM CASE STUDY

The section describes Boston startup/ entrepreneurship ecosystem and how well it is developed. It has 31 colleges and universities and 4,000 active startups in Boston. The city and state economic environment is that Boston offers the

second best quality of life and Massachusetts best state economy in the U.S. as the growth of employment in high tech industries has exceeded 9% each year since 2010.

One fast growing startup district in this region is Kendall Square, the east end of MIT campus. As one can see from MIT Entrepreneurship Ecosystem, Kendall Sq. has sprawled into a hub of high-tech ventures. Many of MIT's research labs for commercialization started in this area and MIT is further planning to expand its innovation and entrepreneurship ecosystem around it. Its campus map shows several entrepreneur resources in red including Martin Trust Center for Entrepreneurship and Media Lab. Six maker spaces are operating throughout the campus, and external resources such as Cambridge Innovation Center and LabCentral are closely integrated along the campus. The latest MIT entrepreneurship impact report summarizes the outcome of 30,200 active alumni companies and 4.6 million people employed by the companies founded by MIT graduates, which generate \$1.9 trillion in annual revenues.

In the next section, we will focus on the development history of Kendall Sq. and how it particularly grew social capital, which then helped the regional entrepreneurial ecosystem to grow. In doing so, one can see the ecosystem's successful transitions from past Route 128 to today's metropolitan Boston area.

Innovation Ecosystem Development of Kendall Square

MIT has been driving entrepreneurship and innovation around Kendall Sq. In the era of computer hardware rushes, companies gradually pulled up from Kendall Sq. and found places with cheaper labor or better surroundings in suburbs like Route 128. NASA project came to a halt in Kendall Sq. which was then quite empty, neither being a hub for residential or industrial complex. Then biotech and pharmaceutical companies made their way into the area, followed by MIT Center for Cancer Research and some university startups like Biogen co-founded by a MIT professor, Phillip A. Sharp. Up until early 2000s, however, Kendall Sq. still lacked much of the infrastructure and amenities to become a vibrant community for working professionals, students and researchers and local residents. The president of MIT had MIT Investment Management Corporation (MITIMCo) come up with a plan to put the necessary community needs there in the area. MITIMCo's managing director of real estate noted, "Part of our job is to build the

ecosystem, the space around the Institute" including placement of buildings to be rented by biotech and IT companies and also supporting restaurants and retail. As physical spaces and soft infrastructure appeared over time, more companies made a decision to move technology units into Kendall Sq. The Dutch lighting and medical-device company Phillips moved its research headquarters to the outskirts of Kendall. In addition, GE announced a decision to move its corporate headquarters to Boston. These movements are all to leverage the innovation ecosystem in this Boston area. Prior to these events, Amazon moved its mobile development unit to Kendall, Google expanded in its building the research unit doing lots of education service development work, and drug companies are piling in, too (Regalado, 2013)

In a nearby town, Harvard University started i-Labs around year 2010 and then successfully expanded into LifeLab, a biotech accelerator. MIT has a long history of collaboration with Harvard University in medical research. While the speed and agility are lower for biotech startups, the return on investment could be higher and last longer as seen in many biotech and future materials ventures. In the short and medium term, such biotech initiatives by university startups still serve societal needs and make use of public funding and large companies' R&D investments effectively, generating income for their employees and creating social value as in the healthcare sector.

Kendall Sq. is further in transformation as MIT has announced to purchase the federal site and develop the area into an innovation zone by "the Engine" (press release by MIT). While Silicon Valley enjoys the largest VC funds overall, a study from the U.S. Chamber of Commerce Foundation finds that "Boston tops Silicon Valley as an innovation hub" where specific reasons for this claim are "livability and connectedness with the region's educational and local institutions as well as citizens in the community." Also Boston, the Hub's life science and biotech focus is ripe for nation's startup activities today as the city is well situated amid world-class universities as well as hospitals and research centers.) (Bettis, 2016).

CONCLUSION

In an RIE with enriched social capital, entrepreneurial universities can go beyond just incubating startup companies but cultivate innovation leadership prepared for all types of future organizations and challenges. In this

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learning process, failures are often experienced by student entrepreneurs sustained by the RIE and rather produce a resource of lessons learned. Universities and the students enrolled in both degree and non-degree programs at varying age levels contribute to nurturing social capital (as agents of change) as well as take advantage of it (as beneficiaries). Social capital, a dynamic ecosystem for regional innovation and entrepreneurial universities will trigger the innovation value chain and make the ecosystem move faster toward economically and socially impactful solutions. In this emerging field, this paper will add meaningful insight and a direction for the role of the entrepreneurial university in a new RIE and how to foster its necessary social capital.

Ecosystems are a living organism. They can grow or decay or go through any phase of a life cycle. The case of Route 128 and the gradual transformation of Kendall Square to a wider influence makes this point clear.

It can take decades for an ecosystem to grow wider and stronger after some periods of demise. The condition of successful growth is the will, vision, resources behind the growth of an ecosystem by the visionaries. Leading epicenter role of entrepreneurial university (MIT), focal industry (Biogen biotech), diversity in pond like structure (Kendall) all helped create the social capital, generated in an innovation ecosystem.

REFERENCES

- [1] Regalado, A. (2013, July 1). In Innovation Quest, Regions Seek Critical Mass. MIT Technological Review. Retrieved from <http://www.technologyreview.com/news/516501/in-innovation-quest-regions-seekcritical-mass>
- [2] Bettis, K. (2016, March 23). MIT grads often choose Cambridge for startups. NewBostonPost. Retrieved from <https://www.newbostonpost.com/mit-grads-often-choose-cambridge-for-startups>

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