



An Experiment in **Instigating Entrepreneurship to a Non-Entrepreneurial University**

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From the cat-scan to the humble seat belt the list of technologies that shape our life and came out of university research is endless. The list ranges from ubiquitous innovations that keep as healthy like the ultrasound, recombinant DNA and the flu jab, to ones shaping our future, like solar panels, GPS, LCD screens, lasers, even Google. The integration of these products to our daily routine is so great that we sometime fail to appreciate the difficulties involved in bridging the gap between the intangible knowledge embedded in the original prototype and the tangible end-result that we are all so accustomed to. This task asks for a knowledge seeking faculty scientist who has an understanding of markets as well as an aptitude for original research, one who is concurrently focused on specific products as well as abstract ideas. In short, this requires faculty staff to be both scientists and entrepreneurs.

In instigating entrepreneurship to the university lab, policy makers allowed universities to patent and license discoveries funded by public money. This trend, which started with the Bayh Dole Act, spillovered beyond

US borders to the point of being almost universally accepted. Policy makers around the globe are now encouraging their universities to reach out to private firms and transfer their technologies, actively working and cooperating with the private sector in commercialize university research.

This initiative gave birth to the entrepreneurial university (E-U), an academic institution whose vision, goals, and strategy place knowledge transfer and entrepreneurship at its heart. There have been numerous studies on E-U's, providing insights about the paths of these institutions towards entrepreneurship. We now have a good understanding of the role that history, traditions and organisational structure, along with formal or informal environmental conditions play in shifting universities towards entrepreneurship. Unfortunately, the evidence draws a success story only for elite universities.

If one looks at how entrepreneurship relates to the broader sweep of universities the evidence is disheartening. In territorial terms, E-U's are still small dots on the map of an otherwise non-entrepreneurial archipelago. From the 6,000 worldwide universities E-U's constitute only a small subset, located in the US, the UK and few hubs in Central Europe. Unless we are to believe that all worthwhile scientist are positioned on these few dots on the map we are facing a huge deficit in putting to use the genius of the billions of people located outside these fortunate clusters.

There is good reason for this limited success in developing such institutions. In order to fire up the entrepreneurial spirit that is paramount in buttressing an E-U you need

“*entrepreneurship*”. Yet, there are few entrepreneurial clusters worldwide, and they largely coincide with the places where we see E-Us. Considering that there is a lacuna of evidence about how the lack of entrepreneurship affects a university’s transformation process from non-entrepreneurial to entrepreneurial, we decided to run an experiment. We attempted to transform a university that operated in a barren entrepreneurial landscape, which nonetheless had a good track record in innovation and respected technical capabilities, into an E-U.

In detail, we applied for funds to the Municipality of Athens and were given a grant to create from scratch a Technology Commercialization Office (TCO) at the Agricultural University of Athens (AUA), Greece. Within the two years period of the experiment we employed experts with prior experience in university tech-transfer, emulated the best practices, educated faculty scientists and administrators, forged relationships with the private sector, and in the process monitored our progress as to empirically assess our success and the lessons learned both quantitatively (Drivas *et al.*, 2017) and qualitatively (Sideri and Panagopoulos, 2017).

Our main finding is that, contrasting studies that link disclosure with faculty profiles, at AUA faculty characteristics failed to explain disclosure, technological readiness and business potential. The overall picture that emerges is of faculty scientists who (with few exceptions) had no understanding of commercialization, which was an “exotic” concept that attracted attention, prompting faculty to bombard the TCO with all types of inventions leading to a disclosure rate of 25%. Such *en masse* disclosure created congestion, forcing the nascent

TCO to divert its limited time/funds away from commercialization.

The main lesson we draw is that an active entrepreneurial ecosystem creates educational spillovers by indirectly educating faculty through interaction with colleagues working outside the ivory tower, or with perspective licensees. Such spillovers are effectively a subsidy that allows the TCO to streamline potential technologies at the laboratory level, avoiding unnecessary disclosures. In their absence the only alternative was to educate faculty in thinking entrepreneurially. This required both teaching and mentoring, which nonetheless did not always guarantee short term results considering that even in the US the learning curve was considerably long.

To conclude with some practical undertones, considering that the shift to an E-U is a long term investment, the “short-circuit” method we employed that envisioned a *top-to-bottom* approach in fermenting an entrepreneurial spirit from naught, can fulfill its goal if it only has the full support of the university administration. The administration must nurture the fledgling TCO in the interim period until the funds from the technologies licensed accumulate allowing for an autonomous TCO. If the administration does not believe in it, as the TCO experts employed in the experiment moved on, irrespectively of the infrastructure they left behind, all efforts will wither down.

For a rigorous analysis of the aforementioned topics, visit the *Journal of Technology Transfer’s* special issue: “Agri-science to agri-business: the technology transfer dimension” forthcoming in 2017.

TECHNIS: An Experiment in Instigating Entrepreneurship to a Non-Entrepreneurial University

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