



# THE ROLE OF TU WIEN IN THE VIENNESE TECH STARTUP ECOSYSTEM

Executive Summary

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Stipendien-ID 1972

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## Project Details

**Projekt/Stipendien-ID** 1972

**Title** The role of TU Wien in the Viennese Tech Startup Ecosystem

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The thesis investigates the current status of the Viennese Tech Startup Ecosystem aiming to identify and to assess the potential entrepreneurial pillars. With this in mind, we focus on the role TU Wien plays in the Viennese ecosystem. Universities per se generate new knowledge thus, universities are the source of innovation. The goal is to identify the needs and prerequisites for a strong startup/spinout activity at university level and to tag the needs in the triple helix in order to strengthen Austria's economy

The thesis will offer insights into

- TUW Entrepreneurial University activities & main commercialization challenges
- Better understanding of incentives for scientists & students to settle for an entrepreneurial life

**Short description**

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## Executive Summary

Over the past years the higher education system has been facing ‘unprecedented challenges in the definition of its purpose, role, organization and scope in society and the economy’<sup>1</sup> like technological progress and its embodiment in the everyday activities of universities, the shift towards information as a service along with the up and downs of the economy and funding fluctuations. These changes have had a great impact on this domain and at European level, to overcome the demands of these changes, a new concept has been embraced: ‘Entrepreneurial University’

Although historically centered on the concept of open science by means of publications and information dissemination, the interests of universities have been slowly drifting to accommodate commercialization, taking a more and more active role in bringing research from the laboratory to the market. This change directly affects one of the key actors in this scenario: the scientist. Although some scarce research do exist on how this affects their social-psychological profile, the actual impact on how the integration of research commercialization reshapes their career trajectories and professional persona in Austria has been barely tackled. Moreover, this shift has been widely criticized due to its direct affront to open science and resemblance with a firm, limiting the dissemination of science.<sup>2</sup> Understanding the cognitive aspect of technology transfer and the determinants of academic engagement can contribute to assessing the impact such a big change will have on the overall academia culture.

The important contribution to the economic development of founders is among the most important inquiries of our time<sup>3</sup>. While it is vital to understand the needs of the individual entrepreneur, we cannot oversee the fact that entrepreneurship is strongly related to the concept of ecosystems. Until recently, literature has primarily been focused on the individual entrepreneur, but it is vital to also understand their surrounding environment<sup>4</sup>. Focusing on the individual entrepreneur will not answer questions like: ‘Why do some places thrive with innovation while others don’t?’, ‘What are the determinants that help a startup community achieve critical startup mass?’ or ‘How does the startup community achieve critical startup mass?’<sup>5</sup>.

Each ecosystem is unique in its own way and surprisingly despite high real estate and living costs, some startup communities prevail. This is why it is vital to understand our startup ecosystem and discover the main inhibitors and thriving factors existing, especially now that Vienna is experiencing an increase in startup creation, thus the need to study the long-term perspective of Vienna as Austria’s main startup hub. My thesis comprises an overview of the Austrian and Viennese ecosystem, pin-pointing, its strengths, direction and support for entrepreneurial endeavors.

Technical universities are one of the main feeders to local startup ecosystems as they possess vital resources: people (students, researchers & professors), research labs, techno-entrepreneurship programmes and technology transfer offices. For some, the proximity to a research-extensive university is considered groundbreaking metric for the success potential of a startup community<sup>6 7</sup>. Austrian universities among which TU Wien can have a strong hand in building today’s tech boom by deriving a comprehensive model of entrepreneurial university focused on enhancing the commercialization level of academic research output and a culture which encourages innovations. This is only possible by understanding and finding a way to overpass major challenges like how to build engagement and strengthen the entrepreneurial skillsets at university level, how to align techno-entrepreneurship-oriented activities with the core functions of teaching and research universities must fulfill and how to nurture a techno-entrepreneurial-friendly culture which supports risk taking and builds

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<sup>1</sup> OECD. 2012. A guiding framework for entrepreneurial universities. Available online at <https://www.oecd.org/site/cfecpr/EC-OECD%20Entrepreneurial%20Universities%20Framework.pdf>

<sup>2</sup> Jain, S., George, G., Maltarich, M. 2006. Academics or entrepreneurs? Investigating role identity modification of university scientists involved in commercialization activity. *Research Policy* (2009). 38, 922-935. Available online at: <http://www.sciencedirect.com/science/article/pii/S004873330900050X>

<sup>3</sup> Feld, B, 2012. *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. 1st ed. New Jersey: John Wiley & Sons,

<sup>4</sup> Wamda. 2016. 90% of Tech Startups Fail [Infographic]. [INFOGRAPHIC] Available at: <http://www.wamda.com/2013/02/90-percent-of-tech-startups-fail-infographic>. [Accessed 06 October 2016].

<sup>5</sup> Feld, B, 2012. *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. 1st ed. New Jersey: John Wiley & Sons,

<sup>6</sup> Feld, B, 2012. *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*. 1st ed. New Jersey: John Wiley & Sons,

<sup>7</sup> Graham, R. , 2014. *Creating university-based entrepreneurial ecosystems evidence from emerging world leaders*. Cambridge: MIT Skoltech Initiative.

innovation capacity within the institution. As the Ewig Marion Kauffman Foundation concluded in their Entrepreneurial Campuses<sup>8</sup> report, there is no 'one-size-fits-all' method for nurturing and enabling entrepreneurial preparations within university campuses.

Undeterred by the increasing buzz and interest around the new concept of technological entrepreneurial universities, there has not yet been developed a reliable solution for developing, monitoring and evaluating the entrepreneurial performance of technical higher education institutions<sup>9</sup>. Such solutions prove to be of high-reaching complexities due to the fact that one must look beyond the immediate institutional output metrics and incorporate performance evaluation metrics for long term aspects as well as due to the fact that there is a considerable variation in academia's involvement across various technical disciplines by virtue of the type of knowledge prevailing and the intellectual property protection methods which can be enforced<sup>10</sup>. Furthermore, it must envisage the different views and expectations of the local stakeholders within the operational dimension of the ecosystem.

The idea that techno-entrepreneurship needs a specific development and evaluation approach is supported in the literature too by S. Shane<sup>11</sup> and Owen Smith<sup>12</sup> who believes that the life sciences domain is a great generator of spinouts as a consequence of the discrete nature of the invention and the long time-span of the product development. In contrast, academic involvement in the social sciences are of great interest for public sectors and usually take the form of consultancy and contract research<sup>13</sup>. There is also a great difference between what is considered an entrepreneurial activity in the technical domain and other domains. For example, in humanities public lectures and books targeting a certain audience are examples of the most commonly accepted forms of entrepreneurial activities<sup>14</sup>.

According to Arena and Arnaboldy<sup>15</sup> the development of a performance measurement system for technological universities can underpin the value creation of universities in this domain and counteract the reduced public financial support for research.

The thesis defined essential metrics for the creation and assessment of the TU Wien techno-entrepreneurial ecosystem considering that a thriving start-up ecosystem is a result of multiple factors: performance, funding, talent and start-up experience<sup>16</sup> and involves multiple stakeholders. A complete analysis focused on the above-mentioned issues provides answers to critical questions for researchers, students, entrepreneurs and investors active in the Viennese university-based technology-driven entrepreneurial ecosystem and additionally offers insights into the role TU Wien plays, has played and could play in the local ecosystem and into how to improve the campus-wide entrepreneurial experience.

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<sup>8</sup> W.E.F. Torrance. 2013. Entrepreneurial Campuses: Action, Impact, and Lessons Learned from the Kaufman Campus Initiative. Ewing Marion Kaufman Foundation

<sup>9</sup> Wright, M., Birley, S., Mosey, S. 2004. Entrepreneurship and university technology transfer. The Journal of Technology Transfer. Vol. 29 Nos 3/4, pp. 235-246

<sup>10</sup> Abreu, M, 2013. The nature of academic entrepreneurship in the UK: Widening the focus on entrepreneurial activities. Research Policy, 42, 408-422.

<sup>11</sup> Shane, S., 2004. Academic Entrepreneurship: University Spinoffs and Wealth Creation. Edward Elgar, Cheltenham, UK/Northampton, MA, USA.

<sup>12</sup> Owen-Smith, J., Powell, W.W., 2001. To patent or not: faculty decisions and institutional success at technology transfer. Journal of Technology Transfer 26, 99-114

<sup>13</sup> Abreu, M, 2013. The nature of academic entrepreneurship in the UK: Widening the focus on entrepreneurial activities. Research Policy, 42, 408-422.

<sup>14</sup> Abreu, M, 2013. The nature of academic entrepreneurship in the UK: Widening the focus on entrepreneurial activities. Research Policy, 42, 408-422.

<sup>15</sup> Arena, M., Arnaboldi, M. 2013. How dealing with spending reviews? The case of Italy. Public money and Management. Vol. 33 No. 1, pp4-6

<sup>16</sup> COMPASS. 2015. „The Global Startup Ecosystem Report 2015“, Startup Compass Inc.