Authors: Joseph A. McCahery and Erik P.M. Vermeulen

Institution: Tilburg University, The Netherlands

Theme: Place based innovations (academic contribution)

Title: Triple Helix Strategies in High Tech Clusters: One Size Does Not Fit All

Abstract:

In recent studies, academics have analyzed and assessed governments' attempts to replicate the entrepreneurial and innovative success of Silicon Valley in an effort to stimulate economic growth. The main conclusion is not surprising to anyone interesting and familiar with the emergence and development of tech clusters. There is a widespread belief that these government initiatives are usually characterized by poor design and a lack of understanding of an entrepreneurial ecosystem. The rise of Silicon Valley is mainly attributed to the growth and commercialization of research and development (R&D) activities by Stanford University and its graduates. The fact that California courts historically refuse to enforce post-employment covenants not to compete surely helps explain the rapid growth of the high-tech district compared to other regions with high- technology universities. Others give a more social explanation for the differences between Silicon Valley and other high-growth technology centers. They reason that a poor public transportation system and a lack of bars in the Valley encourage nerdy activities and, subsequently, innovation and technological inventions. The truth is that many, not easily to replicate, economic and social factors contribute to the difference in the relative performance of the Valley compared to other high-tech clusters around the world. For instance, the belief that a symbiotic relationship between industry and university research would emerge in a campus-like environment was paramount to the success of the Valley and the development of applicable, market-relevant and innovative technologies.

Not surprisingly, with the financial crunch and the subsequent economic downturn having taken its toll, governments are set to play a new role in encouraging innovation and entrepreneurship.

We see that governments, aware of the fact that the financial crisis offers new opportunities, increasingly partner with large corporations, universities and knowledge and research institutions. These triple helix collaborations are, among other things, directed to the establishment of knowledge-intensive service clusters in which the structure and dynamics of interactions among the different actors drive innovation and value creation. Indeed, the hope is that the triple helix approach will eventually lead to the formation of formal and informal networks of entrepreneurs and other economic actors.

In this paper, we argue that to build tech clusters, governments should not just attempt to establish triple helix collaborations. We show that clusters arise (and develop) from particular competitive advantages unique to a specific area or region. For instance, in an effort to stimulate innovation, Brainport, which is a business location that is centered around Eindhoven in the Netherlands, was established as an ecosystem for collaboration among large companies, universities, knowledge and research institutions, and the government. This initiative is considered successful in terms of R&D spending and the production of patents. In 2008, companies invested 1,8 billion in research and innovation, which resulted in the production of a majority of the total patents that were registered in the Netherlands. The High Tech Campus in Eindhoven, once established by Philips, has become the cornerstone of the Brainport region. It is a breeding ground for innovation shared by more than 7,000 R&D engineers from more than 90 companies, including over 40 start-up companies. In terms of benchmarking the success of Brainport, it has generated more than 50,000 jobs and attracted support from government and industry sponsors for its innovative track record. But, it is probably too soon to know what the effects of the Brainport initiative will be on the management of innovative and strategic change of the firms in the area. Clearly Brainport has supported and encouraged firms that focus on excellence in research and development without a sector specific focus. It seems quite possible, on the one hand, that the firms in these industries will experiment with new alliance partners that influences their survival, performance and growth. On the other hand, there is a concern that the Brainport hub may not realize its expectations unless there is some focus in investment and strategy, which is considered crucial to the success in this area. Further, to the extent that two important ingredients of innovation seem to be absent, namely venture capitalists and

intermediaries, such as specialized law firms, there are concerns as well about the support and capacity for development of the firms operating in this setting.

The goal of this paper is to consider and assess the ingredients of 'successful' tech clusters. In order to diagnose possible shortcomings of and, more importantly, propose several improvements to the triple helix approach, this paper will critically assess the development and the current status of three tech clusters in the Netherlands, England and Germany. An important, but not surprising, finding is that a 'one size fits all' triple helix strategy does not have the intended effect. Using data from 2005 to 2011, which includes both pre-crisis and post-crisis entrepreneurial activities, we examine the 'success' of tech clusters in Cambridge, Eindhoven and Berlin. Our results will show that governments that pursue a single strategy are unlikely to generate sufficient growth and the targeted level of entrepreneurial activity.

In this paper, we distinguish between four types of tech clusters. First, we observe clusters that are dominated by university 'spin-outs' and investments. Second, it is recognized that clusters may be the result of the strong presence of large multinational companies. Third, we distinguish clusters that are mainly initiated by government initiatives and subsidies. Finally, clusters may be the result of the emergence and development of a strong start-up community. Our research shows that each cluster calls for a different triple helix strategy. We show that government interventions should be carefully weighed against possible negative effects on the development of the tech cluster. For instance, government sponsorship could crowd out the supply of venture capital, if it does not encourage all the players in the cluster. Also, a tax incentive to encourage early stage investments in start-up companies could reduce the necessary supply of other non-strategic investments. With this in mind, this paper will offer several low-cost solutions for government intervention that could lead to tailor-made triple helix strategies. We set out a number of important recommendations for improving high tech ecosystems based. The study holds important lessons for governments that so far have failed to emulate Silicon Valley's success.

Keywords: Triple Helix, Silicon Valley, Venture Capital, Entrepreneurship