

Breznitz, S. M. (2014). *The fountain of knowledge: The role of universities in economic development*. Stanford, CA: Stanford University Press. 200 pp.

Review by James K. Woodell

*I*n *The Fountain of Knowledge: The Role of Universities in Economic Development*, Shiri Breznitz (2014) has undertaken a laudable analysis of the factors that lead to success in this domain of university mission fulfillment. She takes a close look at changes in the technology transfer operations at Yale University in New Haven, Connecticut and at the University of Cambridge in England in the 1990s and early 2000s. Breznitz finds differences in the ways in which the institutions approached these changes and concomitant differences in the extent to which the changes contributed to economic development in the local biotechnology industry clusters.

Breznitz's reasons for writing this book are born of her intrigue with the idea that universities—beyond preparing students for the world and for work and beyond scientific discovery—are important to the economy. She discovered this link early in her scholarly career, during research on the biotechnology industry in Cambridge, Massachusetts. “Why universities?” asks Breznitz. The idea that universities can be engines of economic and community development should not be as surprising as it is, but we should be grateful for the intellectual curiosity sparked by this kind of surprise, which inspires important investigations like the one undertaken by Breznitz.

In her introduction (Chapter 1), Breznitz outlines the main arguments of the book. First, she posits that how a university approaches technology transfer—and, in particular, changes in its technology transfer operations—makes a difference in its contributions to economic development. She notes, however, that not all types of changes or approaches to change make a positive difference. The economic impact of changes in technology transfer operations, according to Breznitz, boils down to a few factors: how fast the changes happen, whether those changes happen in pieces or more comprehensively and whether the changes are performed in a way that engages external stakeholders (business and industry stakeholders, in particular) or is internally focused.

Through the next four chapters, Breznitz tells the story of the evolution of university technology transfer, starting with broad

context, then focusing on the United States and United Kingdom policy contexts, and ultimately directing her attention to the specific cases of the University of Cambridge and Yale University. In Chapter 2, Breznitz provides a thorough review of the literature on both university technology transfer and organizational change, providing an important synthesis of both external factors (historical policy context and environment of industry relationships) and internal factors (institutional culture and policy and the organization of the technology transfer office) that help to determine a university's success with technology commercialization. Chapter 3 provides an account of the public policy contexts in which the two case study universities reside, describing the history and current state of science funding and technology policy regimes in the United States and the United Kingdom.

Chapters 4 and 5 chronicle technology transfer change at Yale and at Cambridge, respectively, and also assess the success of the two universities' approaches in terms of contributing to economic development; Chapter 6 then provides a cross-case analysis. In these chapters, Breznitz details the differences in university culture, policy, and organization important for undergirding her conclusions related to what makes for successful contributions to economic development through technology transfer. Ultimately, Breznitz found that changes at Yale had a positive influence on the local biotechnology industry, whereas changes at Cambridge did not lead to positive outcomes. External factors differed, but what mattered most were internal factors—what Breznitz calls velocity and intensity. Yale made changes in a relatively short period of time—a few years—across institutional policy and culture and the organization of technology transfer operations. Cambridge's changes happened over a longer period of time and were much more piecemeal. Although the author notes that internal factors were most important, she also notes the significance of inclusion. Yale made changes in collaboration with external stakeholders in the regional business and industry network, and Cambridge made changes independent of such engagement.

I started out skeptical that this book could provide any new insights. I was concerned that the stories of two elite universities might offer few lessons for most institutions' efforts at technology transfer. But the interplay of the kinds of external and internal factors described by Breznitz can be seen at any university, and there are indeed some widely applicable lessons here. The broad influence of the lessons is strengthened, in my view, by the author's approach. First, she looks at process, not just inputs and outputs.

Too many analyses of technology transfer are narrowly focused on what can be delineated and counted rather than on what is actually happening at the institution around technology transfer. Second, Breznitz looks at the link between changes inside the university and the extent to which these are shaped by interactions with stakeholders outside the university. Many studies take for granted that universities are part of “innovation ecosystems” without really exploring what that looks like in practice, or again reducing the role to inputs and outputs. Breznitz’s sense of the complexities of intrauniversity organizational dynamics, and the importance of engagement with external stakeholders, turned my skepticism into enthusiasm for her message.

That said, the examination of these complexities is incomplete, in my estimation. Although Breznitz does focus on process, she also packs a lot into the narrative with regard to inputs and outputs, by way of describing the universities’ role in and influence on local biotechnology industry clusters. The input/output detail is helpful, but I was left wondering whether it could have been more beneficial to delve deeply into some of the complex interactions between and among university and community contexts, institutional policy and culture, and external stakeholders and internal networks. For example, I found fascinating the impetus for change at the two universities and would have welcomed more discussion of how this influenced the speed of change. At Yale, Breznitz points to the murder of a student on campus, which helped university leaders see a disconnect with the community and which led to a comprehensive plan to change the university’s interaction with its city and region, including economic development. At Cambridge, change was fomented by “government pressure” related to research impacts. It was not surprising, then, to find that the change at Yale was fast, comprehensive, and engaged—there was urgency and a crisis of identity. The issue of institutional identity is only hinted at by Breznitz. She describes in detail historical and environmental influences on the institutions, but stops short of an analysis of how the resulting institutional identities played a role in organizational change and the level of engagement with community around that change. I also found the analysis incomplete in its lack of inclusion of participant voices. Breznitz rarely provides direct quotations from her interviews. More of these would have given texture to the author’s analyses and would have provided a stronger depiction of the kinds of complexities that Breznitz effectively argues are so important.

It is challenging, however, to explicate the complicated organizational factors that influence university contributions to economic development through technology transfer and commercialization. Although many researchers and policymakers are reducing such analyses to the lowest common denominator and restricting their consideration to readily enumerated factors, Shiri Breznitz presents a refreshing perspective on the less tidy factors of institutional policy, culture, and organization, reminding us that not everything that counts can be counted.

About the Reviewer

James K. Woodell is vice president for economic development and community engagement at the Association of Public and Land-grant Universities (APLU). As staff director for the Association's Council on Engagement and Outreach (CEO) and Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP), he works closely with member institutions to develop tools and resources to enhance their regional engagement and economic development efforts. His scholarly interests are in the ways in which public research universities organize for the engagement mission. Woodell earned a Master of Education degree from Harvard University.