

Abstract

Searching for Silicon Valley in the Rust Belt: The Evolution of Knowledge Networks in Akron and Rochester

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In their heydays, Akron, Ohio and Rochester, New York were the leading places where innovation in their core areas of technology—polymers and optics design respectively—happened. Each accounted for approximately 12 percent of global patents in their areas and a network analysis of those patents shows each occupied a central position. However, since the early 1980s, the fortunes of the cities have diverged somewhat. Akron's share of global innovation has fallen while Rochester's has grown in relationship to the industry itself.

Explaining these differences requires a theory of how institutional arrangements change. This paper develops a theory of institutional change as rooted fundamentally in a process of organizational identity adjustment. Successful institutional change requires actors within an institution to relate to each other and to the institution itself in new—sometimes radically new—ways; it requires, in other words, adjusting the relational identities of organizations embedded within the rules and relationships of a given context. Drawing on the metaphor of annealing processes in material science, I argue that organizational identities adjust through a process in which local arrangements are repeatedly heated (disputed) and cooled (solidified) over time. The contribution of the paper is to examine how the context for that process (the oven, to continue the metaphor) affects the process. In particular, how the state and other key brokers (e.g., universities in this particular context) facilitate problem solving among actors shapes their orientations and identities toward each other. New provisional relational identities are created in this process and these form the basis on which trajectories of institutional transformation are laid.

In particular, the paper shows that the divergence of Akron and Rochester is partly attributable to differences in ways that universities as brokers of relationships facilitated problem solving among major companies, small firms and local government. In Rochester, the university's approach encouraged these actors to engage each other in dialogue. Over time, organizational identities have adjusted and the outlines of a new localized set of institutional arrangements have become apparent. In Akron, the university's initial approach was to insert itself as a new central actor in the industrial system. Other key actors were not encouraged to engage each other in localized problem solving. Rather the university saw itself as attempting to provide counseling and information where needed. Problem solving activities among firms and organizations proceeded, but they were directed toward actors outside the region itself. Localized institutions have suffered as firms' identities are increasingly tied to communities and interlocutors outside the region.