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Abstract

Ecology of Online Communities

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How do competitive struggles for resources or symbiotic relationships that support a web of interdependent communities shape the evolution of online organizing? Most prior studies of online community success have focused almost exclusively on communities' internal features, but in biology and organization studies, ecological approaches have shown that success is largely---and sometimes overwhelmingly---a function of what others groups are doing. This dissertation contributes to the fields of Human Computer Interaction, Social Computing and Communication an ecological analysis that accounts for the complex dynamic interactions between communities and their environments and is important for understanding the successes and failures of online communities.

The theoretical foundations are in organizational ecology, a vast social scientific literature that applies ecology to human organizations. Online communities are very different from classical

organizations, so this investigation required empirically validating basic assumptions about when online communities will be competitive or mutualistic. It uses linear and nonlinear time series analysis of clusters of online communities to show that mutualistic relationships are more common than competitive ones.

Interviews with members of overlapping online communities empirically support and explain this widespread mutualism in terms of tensions between the types of benefits of participating in online communities. Instead of resolving these tensions using a complex organization that provides the full range of benefits, people build multiple relatively simple communities each specializing in a subset of benefits. Designers of platforms for online communities should cultivate ecosystems of overlapping and differentiated communities by supporting resource sharing and simultaneous participation in many communities.