Forthcoming in PNAS, an article entitled "The spread of innovations in social networks" by Andrea Montanari and Amin Saberi (full text available here).

Abstract : Which network structures favor the rapid spread of new ideas, behaviors, or technologies? This question has been studied extensively using epidemic models. Here we consider a complementary point of view and consider scenarios where the individuals' behavior is the result of a strategic choice among competing alternatives. In particular, we study models that are based on the dynamics of coordination games. Classical results in game theory studying this model provide a simple condition for a new action or innovation to become widespread in the network. The present paper characterizes the rate of convergence as a function of the structure of the interaction network. The resulting predictions differ strongly from the ones provided by epidemic models. In particular, it appears that innovation spreads much more slowly on well-connected network structures dominated by long-range links than in low-dimensional ones dominated, for example, by geographic proximity.