ABSTRACT

Assumptions about how structural inertia and organizational learning jointly shape the evolutionary dynamics of corporations and other institutions are frequently taken as primitive terms in empirical studies. Limited research is available that has examined these assumptions directly by representing organizational resistance to change and learning as interdependent dynamic processes.

On the one hand, studies of organizational adaptation typically start by assuming that organizations do in fact learn and change. The general objective of these studies is to identify the conditions under which organizational learning processes might be facilitated or impaired, and under which leaning processes might confer competitive advantages or competitive liabilities. On the other hand, studies on organizational failure typically start by assuming that organizations are relatively inert. The general objectives of these studies are to find empirical regularities in the relationship between organizational age, size and organizational mortality rates. Because of the considerable heterogeneity of research plans, institutional settings and analytical orientation, empirical evidence cannot by itself provide the only basis for discriminating between these rival views.
Using system dynamics models and simulation methods, in this paper we suggest a conceptual reconciliation of these mutually contentious interpretations of organizational adaptation, inertia and change. Our modeling exercise starts with a comparison between the state of the environment and the state of the company. Performance is modeled as a function of the distance between these two states. In keeping with one of the main insights of behavioral theories of the firm, in our model differences between expected and actual performance trigger a search for alternative solutions. This search takes the form of changes in the balance between exploitation – the reproduction of known courses of action - and exploration - the search for new ways of doing things. According to the model, changes in the balance of exploration and exploitation activities in response to poor performance result in a fractional decrease in organizational inertia. This, in turn, facilitates further exploration and triggers a variety of organizational learning processes taking the form of distinct feedback mechanisms. The same reinforcing process implies that a modification of the exploration/exploitation balance in favor of the latter (as a consequence – for example – of satisfactory performance) will increase organizational resistance to change making exploration progressively more difficult and costly.

Within this general setup we perform a variety of virtual experiments to explore the relationship between inertia (the tendency of organizations to resist change) and exploration (the tendency of organizations to change established routines). The main analytical insight of the model is that a variety of evolutionary trajectories emerge from the interaction between patterns of environmental change and the mechanisms that decision makers adopt to form expectations about future performance. These evolutionary trajectories include - for example - sustained oscillations, damped oscillations, and limit cycles. The main theoretical contribution of the model is to establish a flexible analytical framework within which structural inertia and organizational change can be viewed and represented as co-evolving parts of the same dynamical system.