

7 Organization of the firm

This chapter examines one of the most promising and lively areas of research within evolutionary theory, the one concerned with the study of organizations and business firms in particular. In their book Nelson and Winter devoted an important part of their analysis to business firms, also referring to the Schumpeterian recognition of their central role in determining the pace and direction of technological change.

This chapter briefly presents the basics of the evolutionary perspective on firms and organizations and some examples of a growing family of models.

7.1 Background and problems

Standard neoclassical theory identifies firms with production functions. Production possibilities are perfectly known and the production function is the efficiency frontier which separates known from unknown techniques. In this framework technological change is a sort of magic by which “certain production possibilities are suddenly extracted from the Unknown and added to the Known. There is ordinarily no analysis as to why particular possibilities rather than others should be thus discovered” (Winter, 1968). The reduction to production functions prevents any serious analysis of the role of firms as fundamental loci where productive technical knowledge is generated, stored, socialized, transmitted and, especially, modified and, therefore, as major sources of technological changes (Schumpeter, 1955). Because it puts a particular emphasis on technological, organizational and, in general, economic change, evolutionary theory assigns a central position to theorizing about firms and their internal mechanisms which generate such changes (Nelson-Winter, 1982).

Also neoclassical theory has recently questioned and overcome the most radical standard assumptions and developed more sophisticated theories which open the firm’s black box. Agency theory has studied owner-manager-worker contractual relations acknowledging that firms are made of a multiplicity of agents with heterogeneous objectives and asymmetric information and that their actions must be guided by appropriate incentives

in order to make them comply with the organizational objectives. Transaction costs economics on the other hand has moved from the recognition of bounded rationality and contract incompleteness and analyzed firms as coordination devices alternative to and complementary with the market.

Evolutionary economics acknowledges the importance of information asymmetries in explaining organizations and their structure, and certainly shares with transaction costs economics the emphasis on bounded rationality, but stresses the cognitive aspect of organizations which is mostly neglected by those theories. Firms are there first of all to do things. They produce, store, transmit, socialize and modify the knowledge which is necessary to produce (useful) things (Winter, 1982). Such knowledge cannot normally be detained by a single individual, nor can it be normally put together by simple market coordination, but must be “organized”. Market mechanisms do not in fact convey enough information and knowledge to manage complex distributed knowledge, moreover an important part of the relevant knowledge is tacit and requires direct interaction in order to be apprehended, transmitted and shared.

Evolutionary theory is thus trying to develop theories and models based upon knowledge, cognition and learning, the latter seen not simply as information processing but as structural modification of cognitive representations, action repertoires and organizational architectures, in other words as genuine technological and organizational innovation.

Evolutionary theory in general, and the part concerned with organizations in particular, strongly believes in bounded rationality, usually in a rather strong version thereof. In this and other respects evolutionary theory has strong connections with the behavioural theory of the firm (March-Simon, 1958, Cyert-March, 1963). Agents and organizations face problems they only partly understand and have to build representations of such problems and problem-solving procedures which are inevitably imperfect and continuously subject to revision through learning. An important part of problem-solving is the activity of subproblem decomposition (Simon, 1981): large, complex and new problems have to be decomposed into smaller, more manageable and familiar ones. In organizations problem decomposition maps into division of labour and modularization of artifacts (Baldwin-Clark, 2000) and is usually a precondition for the formation of new markets. Most of the time in fact it is the processes of division of labour, standardization and modularization within organization which creates new technological interfaces whose coordination can then possibly be transferred to the market.