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The Neo-Schumpeterian theory of the firm and the strategy field

In March 1968, presumably the problems of the then still emerging field of business strategy were far removed from Sid Winter's mind. However, as an unintended by-product of trying to grabble with some of the fundamental challenges and gaps in the neoclassical theory of the firm, Winter unwittingly provided critical foundations for the contemporary field of business strategy.

Two of the central questions that Winter posed in "Toward a Neo-Schumpeterian Theory of the Firm" concern the nature of firm capabilities and how this capability set might evolve over time (Winter, 2006). The standard production function conception of capabilities provided a stark demarcation between the known world of production technologies and the corresponding infeasible set. Challenging this conception raised the question of what it means for a firm to "know" how to engage in a particular activity and how this knowledge might change over time.

The corollary implications for a theorist of business strategy are immediate. If, in fact, production knowledge is not a commonly understood set of production techniques readily available to all enterprises that choose to acquire the appropriate input bundle, then the possibility emerges that firms may vary in their capabilities. The fact, as Winter notes, that General Motors has a certain capability for producing automobiles may or may not well position the enterprise for the problem of producing corn flakes. With this move, Winter provides a bridge between the conceptual apparatus of the economics of the firm and the interest in business strategy researchers in performance differences amongst firms—a fundamental fact that was outside the production set of prior non-Neo-Schumpeterian theories of the firm. In this manner, the Neo-Schumpeterian theory strongly prefigures the concerns of the resource view of the firm that emerges in the strategy field years later (Rumelt, 1984; Wernerfelt, 1984). In this spirit, Winter observes:

> The attributes that make the firm a significant entity, worthy of theoretical attention, are its existing patterns of routine activity, its tangible and intangible assets, its recent history, the repertoires of actions available to the individuals involved and the terms in which these individuals conceptualize the firm and their participation in it.

In a related vein, Winter's essay provides strong intimation of the problem of knowledge management that has garnered considerable interest in recent years. In particular, he is sensitive to the distributed nature of knowledge. He asks "does anyone in the large firm know what's going on? Answer No. . . . But these severe limitations on the knowledge of each participating individual do not imply that the *firm*

does not know anything very well. For the firm to 'know' a production technique, it is necessary and sufficient that each individual knows his job when the firm is employing that technique." The capacity to engage in productive activity stems from a set of relations among actors. Organizational routines embody these collections of individual skills and mutual expectations. In this manner, Winter breaks the link, per Polanyi (1964), between the organization knowing how to achieve a desired end and knowing, in the sense of being able to make an explicit characterization of the underlying process.

If there is not a common reservoir of production techniques and the capabilities of individual firms themselves are not codified, then there exists the possibility of unintentional drift in firm capabilities. What behaviorally follows from the command follow plan "B" may change across time. For instance, as Argote (1996) finds, there may be decay in the functioning of a production process with temporal breaks in its execution or with high levels of turnover in the personnel responsible for its execution. An alternative implication of this possibility of drift is the possible returns to organizations that can create structures and processes that inoculate themselves from such drift—a point made by Hannan and Freeman (1984). More affirmatively, this issue poses the possibility of replicating an effective set of routines across multiple units—a possibility which Winter has explored in recent years (Winter and Szulanski, 2001; Zollo and Winter, 2002).

Of course, drift, or what the biologically minded might term mutation, in conjunction with differential selection, is a central basis of change in an evolutionary system. The most immediate such process that might come to mind is, what might be termed, vertical differentiation—those organizations which drift in the direction of becoming "stronger" are more likely to survive the force of market competition than those that drift to become "weaker." However, perhaps more interesting is the question of horizontal differentiation. Organizations become adapted to their particular context. That context might reward (i.e. positively select) certain types of technological capabilities over others (e.g. chemistry versus bioengineering) or ways of distributing products (e.g. company's own sales force providing considerable support versus distributing directly to end-users).

This "horizontal" differentiation has two quite important implications for issues of business strategy. First, firms that are positioned in different market contexts or niches will, over time, begin to look different. Firms will tend to cluster around different attractors in a performance landscape (Levinthal, 1997). Second, a change in market context, such as due to regulatory changes or technological shifts, may significantly reverse the fates of established enterprises. This later point is the issue of Schumpeterian dynamics that have sparked considered interest in the strategy field ranging from empirical examinations of its first-order effect, the degree to which complementary capabilities may partially buffer firms from such shifts (suggesting that the selection criteria may be multidimensional), to managerial structures and processes that may allow greater degrees of robustness on the part of the firm in the face of such turbulence in its environment. These have been among some of the most vibrant themes within the strategy literature.

Mutation is not the only mechanism of change in production capabilities. Indeed, as Winter notes, quite central to Schumpeter is the role of the entrepreneur in identifying novel combinations—combinations of products, means of production, markets, sources of supply, and organization of industry. The issue of recombination raises a challenge to our conception of what constitutes the degree of novelty in a new practice, product, or production process. The beauty of recombination (or sexual reproduction from the perspective of a biologist) is that it permits a change that is simultaneously non-incremental and relatively conservative. As Nelson and Winter (1982) subsequently point out, well-established routines may usefully serve as the building blocks for novel recombinations. In a similar spirit, critical to the notion of punctuated change (Gould and Eldridge, 1977) is the notion of speciation—the crucial change need not be a macro-mutation in the organism but rather a shift in some subpopulation of the existing organisms to a new selection environment (Levinthal, 1998).

The conceptual apparatus of evolutionary economics either implicitly or explicitly underlies a considerable portion of recent research in business strategy. In particular, evolutionary economics allows one to simultaneously engage issues of firm differences in capabilities and the broader competitive dynamics of industries—"in the spirit of the modern synthesis in biology, Nelson and Winter connected a process of Mendelian genetics at the firm level with a Darwinian process of selection at the industry level" (Gavetti and Levinthal, 2004: 1313). Theories of business strategy must incorporate the presence of idiosyncratic firms operating in competitive markets and not only provide insight into the cross-sectional differences amongst firms but speak to their inter-temporal linkages as well. The Neo-Schumpeter theory of the firm outlined by Winter has proven to be and continues to prove to be an important engine of progress in pursuing these questions.

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