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Strategic Change

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Strategy, dynamic capabilities and complex science: management rhetoric vs. reality

- *The dynamic capabilities approach (DCA) has dominated strategic analysis in the 1990s.*
- *It can offer a compelling explanation of competition, relative corporate performance and strategic decision-making.*
- *The strengths of DCA are essentially in its use for historical explanation and its use in strategy formation is limited and possibly erroneous.*
- *There is still a need for a theory of strategy that will offer better application and guidance for practitioners.*
- *Analogies are drawn from the new science of complexity for identifying and shaping strategic decisions.*

Introduction

A particular view of business organizations has come to dominate the mainstream analysis of firms, their competitive strategies and performance, and also to influence thinking about more macro levels of industrial change. Named variously in previous literature as the resource-based, business process, or dynamic capabilities view, an approach sees an organization as a collection of cross-functional and interrelated processes that make use of skills and resources to which the organization has access. Although the origins of the approach can be traced back at least as far as Penrose (1959), a resurgence of interest and analytical development began in the 1980s (Wenerfelt, 1984) and has continued since. The approach has been used for two related purposes in the strategy field: with a market focus, to analyse competition and the relative performance of different firms in an existing product-market; and, with a holistic focus on individual firms, to analyse their scope, change and long-term corporate performance.

In the early part of the resurgent period, the important contributions relied on a mainly static framework to explain cross-sectional differences in firms' competitive performance (Rumelt, 1984; Dierickx and Cool, 1989), or scope (Teece, 1980 and 1982). Hooley *et al.* (1998) refer to this literature as the resource-based approach, and one can stretch it a little in time to include the early work on developing the concept of market orientation (Hooley *et al.*, 1990; Kohli and Jaworski, 1990; Narver and Slater, 1990). Later contributions adopted a more explicitly dynamic framework to explain the historic origins of firms' competitive advantages (Chandler, 1990 and 1992; Teece *et al.*, 1990 and 1997; Collis, 1991). These explained why changes in corporate scope only sometimes brought success in terms of performance (Prahalad and Hamel, 1990; Hamel and Prahalad, 1994; Markides and Williamson, 1994) and assisted executives to develop strategic change programmes in order to enhance the market orientation of their firms (Day, 1994). This literature is referred to by Hooley *et al.* (1998) as the dynamic capabilities approach (DCA)—a term originally coined by Teece *et al.* (1990). As others have recognized (Collis and Montgomery, 1995), despite its origins in the resource-based approach the DCA is not merely an inward-looking view of the organization and strategy. Its central focus is on the degree of 'fit' over time between an organization's changing external environment and its changing portfolio of activities and capabilities (Porter, 1996). The capabilities relevant to the DCA, therefore, are associated with 'outside-in' processes (market sensing; customer relationship management) as well as with internally focused processes (e.g. Day, 1994). Moreover, since the dynamic maintenance of 'fit' involves organizational intelligence and adaptation, the DCA literature converges with that dealing with processes of organizational learning and innovation. These do not relate to just a reconfiguration of resources in existing, but changing, product-markets, but also to the development of new capabilities and applications in new product-markets. At a more general level of abstraction, superior capabilities in learning and innovation provide the underpinning for a firm's sustained competitive advantage. As Teece *et al.* (1997) note,

> *Despite its origins the DCA is not merely an inward-looking view of the organization and strategy*

> *It is in this second dimension, encompassing skill acquisition, learning, and accumulation of organisational and intangible or 'invisible' assets ... that we believe lies the greatest potential for contributions [of the DCA] to strategy.* (pp. 514–515).

Prescriptive guidelines advanced by the DCA

The DCA offers convincingly historical explanations of product-market and corporate performance. Its adherents go beyond this, however, by claiming that it is also useful to executives in strategy formation. For example, Teece *et al.* (1997) state that 'The dynamic capabilities approach seeks to provide a coherent framework which can both integrate existing conceptual and empirical knowledge, *and facilitate prescription.*' (p. 515, emphasis added). Based on the DCA, Teece *et al.* (1997) encourage executives:

- to focus on the creation of distinctive and difficult-to-imitate advantages, rather than on game-playing;
- to focus on competences and capabilities rather than products;

- that strategy analysis should be 'situational' (flowing from a firm's unique capabilities);
- that strategic change is difficult and costly, and must often proceed incrementally;
- that historical analysis of the firm's core competences is relevant because of path dependency, which determines what the firm can do today and puts constraints on how it can develop in the future.

As another example Collis and Montgomery (1995) argue that the strength of what they refer to as the 'resource-based view' lies in its ability to explain how to transfer the notion of core competence into practice. They advise executives to form strategies centred on resources that generate value for customers, and which are: hard to copy; durable; appropriable by the company (rather than by any individual employee); not replaceable by substitute resources that rivals can use to deliver equivalent value; and give the firm a distinctive advantage over its rivals.

Aims of the paper

The principal aim of this paper is, whilst accepting the relative worth of the DCA in providing historical explanation of strategic success, to critically evaluate the claims and prescriptive usefulness that are espoused by its proponents. This critique is structured around two distinct but related arguments, each directed at an implicit assumption that the DCA makes about the role executives are able to play in strategy formation. The first argument relates to limitations of management knowledge in identifying core competences or core capabilities. It centres upon the dichotomy between *ex ante* (forward-looking) and *ex post* (backward-looking) modes of thought. Although the distinction between *ex ante* and *ex post* thinking has been intimated in the DCA literature (Hamel and Prahalad, 1994; Wensley and Day, 1994; Hamel, 1997), its fundamental implications for the optimum practice of strategic change are usually ignored. The result of doing so is to lose sight of the fact that, in the historical identification of core competences, the DCA relies partly on knowledge that can be known only with hindsight, and therefore to which executives do not have access when making strategic decisions. The second argument also has its roots in managerial knowledge limitations of a kind manifested in limits to management control: the DCA implicitly assumes that historically identified organizational capabilities can be managed. While this is ostensibly acceptable, the DCA exaggerates the extent and misconceives the form in which such management is possible. To provide an alternative viewpoint, the paper builds toward the bourgeoning theme of emergent processes of strategic change and explores the ideas and analogies from the new science of complexity that are helpful in determining the roles that executives can and cannot play in forming strategy in a world of change (Parker and Stacey, 1994; Stacey, 1995; Hamel, 1997; MacIntosh and MacLean, 1999).

The DCA relies partly on knowledge known only with hindsight

External knowledge limitations of the DCA for strategy formation

The role and meaning of core competences/capabilities in the DCA

The DCA attributes an organization's past performance to its deployment of core competences (Prahalad and Hamel, 1990) or core capabilities (Stalk *et al.*, 1992). Development of this construct in the strategic management literature has taken place in both elements of this concept: 'competence' has been seen to extend beyond the skills embodied in individual resources, and to embrace cross-functional inter-related knowledge and processes; 'core' has been seen to relate to the competence-based delivery of customer-perceived benefits that give the firm a sustainable competitive advantage and long-term superior performance ('competences' and 'capabilities' are treated as synonymous in this paper; for an excellent commentary of the conceptual bases underlying the distinction see Thomas and Pollock, 1999). The essence of a core competence may be summarized as follows, based on Hamel and Prahalad (1994):

- it is a set of inter-related skills;
- the skills collectively enable a firm to provide benefits regarded as important by customers;
- the form or extent of the benefits gives the firm a substantial competitive advantage;
- the core competence cannot be imitated easily;
- it can be used to provide new products or services imaginable by the firm.

These features provide important clues about why competences can be identified and measured only with hindsight.

Core competence can be identified and measured only historically

When discussion first took place about the possibility of empirically testing what was then known as the resource-based view of strategy (Conner, 1991; Porter, 1991) it was realized that competences would be difficult to measure operationally. The difficulty became more apparent with later conceptual development. For purposes of this paper, the key point from the definition given earlier is that a core competence is not defined only by processes internal to the firm—it also depends on external factors such as customer valuations and the core competences of rivals. Identification and measurement can be done only in hindsight because, without knowledge of the historical context in which a firm's competences were deployed, it cannot be known whether it did indeed deliver important customer-perceived benefits and confer a distinctive advantage over rivals. That is, in the DCA framework, empirical identification of a core competence relies partly on knowledge that is known only *after* a strategic decision is made, and therefore to which executives do not have access when making their decisions. The passage of time changes context, even in existing product-markets, making extrapolation from the past a crude forecasting basis for future strategy. Nor can one deal with this point simply by suggesting that executives should rely on marketing research and other audit vehicles to supply the required kinds of knowledge about future circumstances: *such knowledge simply cannot be assimilated of the future*. Of course, executives can form conjectures about such future knowledge in the form of contingencies and scenarios—but this is a different matter entirely. As Conner (1991, p. 133) notes, 'In a resource-based view, discerning appropriate inputs is ultimately a matter of entrepreneurial vision and intuition', something that the DCA makes no claims to provide.

Similar doubts about the practical usefulness of the resource-based theory of the firm have been expressed recently by Scarbrough (1998, p. 224):

> *Appraising competence not only involves an appreciation of the 'internal goods' which arise out of learning processes ... but [also] the evaluation of such learning in terms of its ultimate competitive effect ... Without the benefits of hindsight available to theorists, how are executives to differentiate between those forms of learning that produce long-run competences and those which only lead into a blind alley?*

Mistakes in applying historical knowledge from the DCA to forward-looking strategic decisions

Failure to acknowledge the distinction between forward-looking and backward-looking frames of reference can lead to errors when attempting to apply the DCA to *ex ante* strategy formation. The cause of the mistakes is simple in nature—nothing more than a failure to grasp that what can be learned of the past might be a poor or misleading guide for the future—but can lead to fundamental errors, beguiling executives to believe that what worked in the past will work in the future's new context.

> *Wrong to believe that what worked in the past will work in the future's new context*

One example of this is the failure of Philip Morris to improve the performance of *7-Up* after acquiring the brand in 1978. On the evidence from previous markets in which they operated, Philip Morris seemed to possess a competence in channel management, which was an important strategic asset in soft drinks. It seemed appropriate, then, after the takeover, for Philip Morris to assign its own executives in charge of *7-Up*. However, they failed to improve performance and soon afterwards, Philip Morris divested the *7-Up* brand from its portfolio. Muris *et al.* (1992, p. 95, fn. 39) attribute the failure, at least in part, to the differences between the centralized form of distribution systems used for beer and cigarettes and the decentralized configuration in soft drinks. As events transpired, the competence Philip Morris had generated by successfully building centralized distribution systems proved non-transferrable to soft drinks. However, this could not have been established when the decision was made: it was revealed only in hindsight, by the firm's experience of working in the new (for Philip Morris) context.

Collis and Montgomery (1995, p. 127) use the example of Marks and Spencer (M&S) to illustrate the same point. The core competences that brought M&S success in British retailing proved to be inadequate for success in North American markets; '*a classic example of misjudging the important role that context plays in competitive advantage.*' A more topical issue is the question of whether M&S still has the appropriate bundle of core competences to compete British retailing *per se*. There is widely accepted historical evidence that M&S *had* such competences over many years. However, does it still have them? Only time will tell, as M&S attempts to deploy its competences in the context of new and future clothing markets. A curious irony, when *ex post* thinking is applied to *ex ante* decisions, is the possibility that a better understanding of a firm's past success might itself lead to mistakes in later strategic decisions. Despite the success the DCA has had in identifying the reasons for a firm's historical competitive advantage, there should be no presumption that these reasons are automatically useful in making decisions about future strategy. This issue is developed in the next section.

> *The core competences that brought M&S success proved inadequate in North American markets*

Internal knowledge/control limitations of the DCA for strategy formation

DCA silence (or presumption) about the managerial controllability of competences

Hamel (1997) observes that it is not often readily apparent what executives are supposed actually to do with the kind of advice given earlier. Even if they could identify the firm's future core competences the DCA does not help in deciding how to identify and implement appropriate kinds of organizational learning, innovation and adaptation. The forthrightness of Hamel's view, which apply as much to the other mainstream approaches to strategy analysis as to the DCA, make them worthy of quotation:

> *Managers simply do not know what to* **do** *with all the wonderful concepts, frameworks, and buzzwords that tumble out … Strategists may have a lot to say about the context and content of strategy, but they*

have, in recent years, had precious little to say about the ***conduct*** *of strategy — i.e. the task of strategy-**making** ... The strategy industry has a dirty little secret. Everyone knows a strategy when they see one ... We all recognise a great strategy after the fact ... We all know strategy as a 'thing' — once someone else has bagged it and tagged it. We also understand planning as a 'process'. The only problem is that process does not produce strategy, it produces plans ... So the dirty little secret is this, **the strategy industry does not have a theory of strategy creation**. It doesn't know where bold, new value-creating strategies come from ... There's no foundation to the strategy discipline.* (Hamel, 1997, pp. 5–7, all emphases are original).

Strategists have a lot to say about the context and content of strategy, but have little to say about the conduct of strategy

What the DCA does do is to direct management's attention to the *outcome* of future strategy, expressed in terms of the match between the firm's competences and its external environment. This outcome-oriented picture of strategy explains why the DCA can be extended to encompass marketing tools such as positioning (Hooley *et al.*, 1998), since marketing is also a field that traditionally subscribes to an outcome-based theory of strategy. Whether one regards such an outcome, at any moment in time, as only speculative, or fantasizes that it is certain, Hamel's point is that in neither case does the DCA offer any explicit guidance about what executives should actually do to bring about the envisaged match between internal competences and the external environment.

In this paper, it is maintained that the situation is even worse than Hamel describes. It is not just merely that the DCA is muted with regard to strategy creation, but rather that its adherents make an unstated presumption that a firm's competences *can* be managed in whatever way is thought necessary to achieve the envisaged outcome. The indictment signifies not the absence of a view, but the presumption of an unquestioned belief in strong powers of management control.

Reasons for limits on the control of competences

In contrast to this presumption, the view in this paper is that some organizational competences are by their character unmanageable, at least in the outcome-oriented way implied by the DCA. The reason lies in the fragmented, dispersed and tacit features of the complementary sets of knowledge and skills that underpin their existence. Organizational competences are socially embedded, across many individuals inside and outside the organization, and emerge largely through an *unmanaged* process of social construction. Although the consequence of this are limits to management control, it has deeper roots as another form of knowledge limitation: executives have limited powers of control because they cannot have access to all the knowledge that must be used by members of an organization when they interact to produce a collective outcome.

Scarbrough (1998, p. 227) echoes this by suggesting that the resource-based theory encourages a 'content' theory of knowledge (where knowledge is viewed in terms of its content and functional value), whereas organizational theory takes a 'relational' view of knowledge (which highlights the way knowledge emerges from patterns of social relations). In an apt phrase, he captures the essence of this distinction: '*a firm does not **have** competences but rather **is** its competences*' (original emphases).

*A firm does not **have** competences but rather **is** its competences*

Link to earlier debates about scientism and centralised socialist planning

The recognition described of the limits to strategic change control bear a striking resemblance to the debate, which took place in the 1920s and 1930s, on the limitations of centralized socialist planning. In this debate, Hayek (1974) warned about the dangers of 'scientism': the uncritical application in the social sciences of the methods used in the physical sciences. Using a conceptual distinction attributed to Warren Weaver, Hayek regarded social phenomena as structures of 'organised complexity', meaning that their character depends not just on the individual properties of their elements, but on the pattern of connectivity between the elements. Unlike phenomena of 'unorganised complexity' (which could be predicted and controlled on the basis of statistical knowledge) those exhibiting organized complexity could not be predicted or controlled in detail because of the impossibility of measuring all the individual elements and their linkages. A failure to appreciate this distinction can lead to the dangerous assumption that a single mind is capable of knowing enough about a social system for the system to be centrally controlled.

> *To act on the belief that we possess the knowledge and power which enables us to shape the processes of society entirely to our liking, knowledge, which in fact we do* ***not*** *possess, is likely to make us do much harm ... If man is not to do more harm than good in his efforts to improve the social order, he will have to learn that in this, as in all other fields where essential complexity of an organised kind exists, he cannot acquire the full knowledge which would make mastery of the events possible. He will therefore have to use what knowledge he can achieve, not to shape the results as the craftsman shapes his handiwork, but rather to cultivate a growth by providing the appropriate environment, in the manner in which the gardener does this for his plants.* (1974, p. 7, original emphasis).

What this earlier debate reveals is that the mainstream field of strategic change today adopts, implicitly and unquestioningly, a view that legitimizes for the corporate executive a role similar to that which some sought for centralized social planners in the inter-war period. The two efforts to rationalize this kind of role are misconceived, and potentially harmful, for the same reason: neither the corporate executive nor centralist planner can gain access to the detailed information needed to design an outcome-orientated successful strategy or plan. Even though strategies are typically evaluated, *ex post*, by outcome-oriented means, and even though the DCA might be better than any other approach in identifying the kinds of knowledge that would be helpful to executives for outcome-orientated purposes, if executives cannot have such knowledge they may become frustrated—or worse, deceived—by what academic research offers.

Critical consequences for strategy advice based on the DCA

The consequence of the aforementioned criticisms is that, despite the enthusiasm with which the DCA has been embraced in the 1990s, the nature of prescriptive guidelines offered on the basis of it are misconceived. The misconception lies in terms of the confidence that executives should have in their ability both to identify and to control the organizational competences salient to the firm's future growth. The DCA offers, to evoke a word used earlier by Hayek (1974) in the context of broad economic management, only a 'pretence' of value-enhancing strategic change. This means that there is still a need for the development of an alternative theory of strategy, in all likelihood one that is less outcome orientated, that will be more useful for executive practice.

> *The DCA offers only a 'pretence' of value-enhancing strategic change*

It is interesting, to speculate about why strategy theory has embraced an approach that, as a basis for strategy advice, is misconceived in its own terms. One possibility, suggested by literature on critical management theory (Willmott, 1999), is that the DCA is too instinctively 'managerialist', in the sense of wanting to legitimize for executives a powerful role in the process of strategy-formation and, more generally, in society. Critical management theory seeks to explain positions of power within organizations in terms of the occupants' superior access to knowledge, which is at least consistent with the DCA's implicit assumptions that executives have the requisite knowledge to identify and control future core competences.

Also intriguing, on the other hand, is the question of why firms are observed to pay increasing amounts for DCA-based consultancy. Carter *et al.* (1999), noting that strategic consultancy is frequently purchased but very rarely shown to have a beneficial impact on organizational performance, explain this in terms of 'organisational consumerism': executives consume such consultancy as a status symbol, or perhaps to legitimize new initiatives they wish to undertake in the organization. Whatever the rationale for the marriage of DCA theory and advice, even public commentators are beginning to question its worth. Jenkins (1999), writing in *The Times* newspaper, refers to strategy consulting as a 'charlatan creed'. In parallel with this point Hayek too, commenting on the vain hope that one could predict as precisely in the social as in the physical sciences, warns that 'this way lies charlatanism and worse' (1974, p. 7). When such reservations can be levelled at the DCA, there is real cause for both strategy academicians and executives to be concerned.

If the DCA view of strategic change is pretentious and misconceived, the question that remains is how to begin to develop an improved, less outcome-orientated, theory of strategy. Where do we look for a framework that can be a basis for 'unpretentious' strategic change? The following section suggests that analogies drawn from the new science of complexity are arguably more useful than the DCA for identifying what executives should focus on when they are making strategy in a world of change.

The question that remains is how to develop an improved theory of strategy

Complex science and unpretentious management

Complex science and the concept of 'emergence'

The science of complexity studies the dynamics of systems and sub-systems whose elements interact in non-linear ways. Non-linear interaction implies that a system can change in unforeseen ways and display apparently chaotic patterns even when it is driven by only a few latent rules, each one of which is individually simple. The revolutionary insight from the science of complexity is the idea of 'emergence': that one can expect order to emerge in such systems, though not in a form that can be predicted in any detail. The order that emerges is often referred to as 'spontaneous' or 'order for free' (Kauffmann, 1993 and 1995) because it is not the outcome of any pre-designed plan. In the 'dissipative structures' version of the theory (Prigogine and Stengers, 1984), physical systems are expected to evolve cyclically through repeated sequences of: stable structure then chaos then new stable structure. In the 'edge of chaos' version of the theory (Kauffmann, 1993 and 1995) biological systems display a spontaneously emerged order that then evolves incrementally following Darwinian processes of natural selection.

No attempt is made here to review the science of complexity—this is done for the non-specialist in an excellent, accessible and stimulating way by Waldrop (1992). Waldrop notes the value of the science in providing new metaphors about the revolution and evolution of social systems, and several authors in the field of strategic management have already begun to use the science of complexity in such a metaphorical way (Parker and Stacey, 1994; Stacey, 1995; Hamel, 1997; MacIntosh and MacLean, 1999). It may be this framework that can provide a basis for unpretentious strategic management. It recommends, at least, a view of strategy conduct that is very different from the outcome-orientated view of the DCA.

Management's proposed roles in complex systems

Although both the DCA and the science of complexity retain the view that executives have an important role to play in the strategy change process, management's assigned role in the latter is to manage the latent rules of the organization, rather than the outcome of those rules. The outcome is left to emerge spontaneously from those rules, with a detailed content that is not the subject of management design or control. This view therefore, abandons the outcome orientation of the DCA, without fully embracing, the 'relational' view of knowledge that Scarbrough (1998) claims is typical of the organizational theory field. In particular, in strategy applications of complex science, management is presumed to have an important and influential role to play in designing the rules from which organizational behaviour is socially constructed. What such applications possess, is illustrated by reference to recent work by Hamel (1997) and MacIntosh and MacLean (1999).

Hamel (1997) suggests that the missing theory of strategy creation be founded on management's putting into place several 'preconditions' of strategy innovation. Once in place, the content of innovative strategies is left to emerge. He hypothesizes five pre-conditions:

- new voices: management should seek and welcome a wide diversity of views, from people inside and outside the firm, when considering strategy innovation;
- new conversations: communication should be encouraged across previously isolated knowledge sets—across functions, hierarchies, areas of technology, business sectors and geography;
- new perspectives: management should be open to new ways of seeing things, possibly through a policy of exposing themselves to new experiences;
- new passions: management should foster a sense of shared destiny in the organization, by engaging the emotional commitment of employees;
- experimentation: successful strategy innovation may be more likely to come from a process of experimental groping, across a widely diverse front, than by a single flash of foresight.

MacIntosh and MacLean (1999) similarly think management's role should be to focus on the deep structure and rules that underpin an organization. What they have in mind are rules relating to what should be done in the organization, how things should be done, and how the rules themselves should be maintained and updated. They view strategic change as a cycle of organizational transformation in which management's role is to bring these rules (which in normal circumstances are tacit) to the surface at times of organizational stagnation, at which stage they formulate a new set of rules, then to create far-from-equilibrium conditions in the organization so that the new rules can take root, then to manage the process which determines which set of rules (the old or the new) grows and which withers.

The complex systems view of management's role is as a scene-setter, not as a scriptwriter. Taking this theatrical analogy a little further: what happens on the strategy stage depends on how the players respond creatively, mutually and interactively to the scene—there is no conscious direction of them towards preconceived outcomes. This view differs substantially from the outcome-focused role assigned to management in the DCA (and, it should be said, in other widely accepted approaches to strategic management). In terms of other metaphors, it depicts much less the idea of a 'captain of industry', or a 'corporate hero(ine)', much more the idea of a community builder, or a facilitator. It is far less presumptuous of the influence that executives have on the detailed outcomes of the social processes at work in business organizations. Business outcomes and performance emerge from social processes that, in terms of content, are not consciously managed.

It depicts much more the idea of a facilitator

Questioning the primacy of these proposed roles

There has been little interrogation of the presumption that management has a particularly influential role to play in the process by which rules are determined. Sometimes (as in Hamel, 1997), the presumption is simply unquestionably apparent, perhaps reflecting a managerialist perspective that is typical of the mainstream strategic management and marketing fields. MacIntosh and MacLean (1999) at least are conscious of the question. They explicitly reject the idea that self-organization is *necessarily* spontaneous, random and unpredictable in social systems and, as already seen, assume that executives can choose the primary rules, which govern the structure. Nonetheless, in doing so, they differentiate their approach from those of most other people applying complexity theory to organizational analysis.

What has not been developed yet is any consensus about the appropriate balance between management control and self-organization in complex social systems. What does seem obvious is that the deep structure of such systems is itself socially constructed and socially embedded, and so is unlikely to be completely determined as a matter of managerial choice. In contrast to MacIntosh and MacLean's view, it seems more likely that such structure is largely organic in nature, and might be highly resistant or respond perversely to management intervention.

The issues warrant greater consideration than can be given here, but are important in the context of mainstream strategic management and marketing partly because they question the managerialist perspective (see Brownlie *et al.*, 1999, for the beginnings of a critical programme of research in these fields). There is every prospect that such a critical approach can be reconciled with the DCA, though to do so would require the distinction to be kept clearly in mind between historical, outcome-orientated explanations and evaluations of strategy, and rules-oriented prescriptions regarding strategy creation.

The science of complexity, when applied to business organizations, unleashes scope for political forces and raises issues of power and distribution that are already familiar topics in the organizational theory field, but which currently are given little prominence in mainstream approaches to strategic management and marketing. What might be in prospect, once centre stage is taken by the idea that businesses are self-organizing social systems, is a model of strategic executives as the caretakers and diplomats of their business community, with a role legitimized by social acceptance of their communal awareness, sensitivity and political skills, responsible for entire learning communities and for the health and holistic well-being of all members of their community.

Biographical notes

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