

The ascent of resource-based theory as constructive rational-behavioral integration for looking inward and outward

Resource-based theory

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Abstract

Purpose – This paper aims to review the rise of the resource-based theory (RBT) in light of the perennial tension between rationalism and behaviorism. The authors appraise the RBT's strengths and its potential fault-line, the erodibility of resources.

Design/methodology/approach – A nontraditional melding of the review and conceptual development methodological modes sheds light on the limitations and future prospects of the three main strands within the RBT, with a special emphasis on its rapidly developing dynamic capabilities (DC) strand.

Findings – The paper proposes a framework for modeling the transformation of resources into usable highly specific assets.

Research limitations/implications – The ascent of the DC strand will itself have to be revisited some day.

Practical implications – The findings imply that the decline of resources should not be left to chance, but be regulated according to one's strategic intent.

Originality/value – Driven by a constructive perspective aimed at integrating theoretical coherence with practical relevance, a nontraditional synoptic tour situates the contribution of the RBT with respect to earlier approaches, in particular the evolving notion of fit.

Keywords Strategic fit, Resource-based theory, Asset specificity, Rational-behavioral spectrum, Resource duality

Paper type Research paper

Introduction

As the field of strategic management continues to move forward by further separating from its inward-looking mother discipline, organization theory (OT), it becomes useful to take stock of the degree to which early formalists (Chakravarthy, 1982) exhorted strategic theorists to adopt newer formalized frameworks. The response was long in the making. Andrews' (1971) exposition still did not refer to the quantitative side of

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precursors like Penrose (1959), and the important article by Astley and Van de Ven (1983) on the central perspectives in OT considered the outward-looking perspective of “strategic choice” as being only one of four valid perspectives in management theory[1].

However, a wind of change shook the 1980s and 1990s and brought the resource-based view (RBV) on the theoretical scene. One has only to consider the debates in the opening 2001 issue of the AMR, the set of articles in the October 2003 special issue of the SMJ and the cocitation analysis of Acedo *et al.* (2006) to recognize that the resource-based theory (RBT) and its derivatives have become the dominant, or at least ascending, paradigm of the theory of the firm from a strategic perspective. According to these latter authors, so far this ascending paradigm encompasses the RBV itself, the *knowledge-based* view (KBV) and the relational view of *dynamic capabilities* (DC).

A cursory review of fairly recent publications illustrates the scope and reach of the RBT bundle: while Lado *et al.* (2006) critique its philosophical underpinnings, D’Aveni *et al.* (2010) extend its reach into the brave new world of temporary advantages. In the meantime, Sapienza *et al.* (2006) show its influence of firm survival and international growth; Walker (2004) shows the contribution of resource leveraging to performance; Combs *et al.* (2011) discuss the role of resource flexibility in leveraging resources; Gruber *et al.* (2010) discuss superior configurations of performance and capabilities; and Foss *et al.* (2008) demonstrate the linkage of the RBT to entrepreneurship.

And now, as we move along the second decade of the twenty-first century, the research literature reminds us of the perennial applicability of rationalism (Kunc and Morecroft, 2010; Cabantous and Gond, 2011) *as well as* behaviorism (Hodgkinson and Healy, 2011; Levinthal, 2011). Against the backdrop of these divergent and possibly contradictory requirements, the centrality of the RBT to contemporary strategic discourse invites an assessment of it as a full theory in the making, one that integrates seemingly contradictory perspectives in constructivist fashion as advocated by Scherer and Dowling (1995) and Mir and Watson (2000).

This paper develops an integrative view of the RBT. It begins with a brief review of the manner in which the concept of “organizational fit”, gradually morphing into “strategic fit”, leads to the emergence of strategy as an independent academic discipline, and gradually progresses to the contemporary frameworks. We then turn to how the RBT of the firm has become its accepted paradigm. After placing the RBT in its historical context, we illustrate some of its weaknesses and inconsistencies; this serves as a backward- as well as forward-looking assessment of strategy having become a field in its own right. Building on the work of Dierickx and Cool (1989), we present an integrative model of the RBT that clarifies the duality of resources and the way in which they become “assetized”.

Evolving notions of *resource* and *fit*

Initially introspective notion of “Organizational fit”

Under the earlier influence of Fayol and Taylor, organizations had seen as their mission to perform their assigned task in ever more efficient ways. The idea of building into organizations a capacity for constant renewal is a compelling one, and may be one of the main drivers behind the Japanese *Kaizen* or continuous improvement approach and those American practices somewhat derived from it, such as the total quality movement. The difference, though, is that the contemporary strategic literature is not simply joining the chorus of cheers, but is attempting to ponder on the features of healthy

resource management. Micro-analyzing the task and structure of the firm offers room for improved business performance, yet neglects to account for the bigger picture.

The insights of early organization theorists culminated in the publication of Cyert and March's *A Behavioral Theory of the Firm* (1963) and Thompson's (1967) *Organizations in Action*. Among their insights were the fundamental and complementary notions of organizational fit and slack. Chakravarthy's (1982) plea for greater rigor to reach beyond purely qualitative formulations, and Venkatraman's (1989) discussion of the parameters under which the various instances of the concept of fit could be empirically explored, have aided the migration of these fundamental concepts into strategic theory.

Yet there clearly were some glaring omissions. Scant attention was paid to defining the task or viewing it from the broader perspective of the external environment or, as Barnard (1938) put it, seeking "effectiveness" instead of just efficiency. The shift in focus from operational rationality to strategic rationality requires the linking of the organization to its environment. Whether then or in its modern extensions (Kaplan and Norton, 2004), the notion of *organizational fit* makes sense. From a rational accounting perspective, profitability might be improved by shortsighted cost-cutting measures, as has been the rage on the corporate scene, but the long-term effect of those measures is often to reduce profitability. Common examples of the prevalent "window dressing" include reductions in spending on research and development and employee training, whereby long-term benefits are replaced by short-term savings.

Outward-looking strategy and concept of "Strategic fit"

While some authors continue working with derivatives of the traditional notion of fit, albeit under a variety of names, McKiernan and Whitehill (1997, p. 791) identify Barnard as the unwitting founder of the modern concept of strategic *and* environmental fit[2]. They see it as "the bedrock of modern analytical approaches to strategy formulation" and as having opened the way for the introduction of the oft-used SWOT technique discussed below. Chandler (1962, p. 13) helpfully defined strategy as:

[...] the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals.

Thus, Chandler advances Drucker's basic definition by specifying not only a present state and a desired future state but also a *path* to achieve the desired goals and *the resources* required to follow that path.

Even though strategic practice appeared intuitive, it was impacted by the synoptic view afforded by economic theory. Since the days of David Ricardo in the late-eighteenth and early-nineteenth centuries, economists have been investigating the sources of "economic rents". Benefiting from a vivid recollection of economic theory, contemporary scholars abbreviate Chandler's definition by defining strategy as "a continuing search for rent" (Bowman, 1974)[3]. The past couple of decades of strategy literature have accepted this quest for economic rents as the *raison d'être* of the discipline: modern researchers are now addressing the problem of garnering economic rents beyond the standard returns to invested assets by gaining sustainable competitive advantage.

Broadly speaking, the classical strategic literature has presented two means of rationally taking stock of the outward sources of a firm's competitive advantage[4]. The

traditional school first explained a firm's performance in terms of its *strengths* and weaknesses *vis-à-vis* market and environmental conditions. This view, generally credited to [Andrews \(1971\)](#), was later developed to include *opportunities* and threats, and its corresponding analysis is known by its acronym SWOT (strengths, weaknesses, opportunities and threats). It should be recognized that this was an effort to couch economic thinking in organizationally rational terms.

Another outward-looking perspective is [Porter's \(1980, 1985\)](#) framework that has sometimes been called the market model, because it is superficially seen as dissociated from the concept of fit but implicitly linked to notions of consumer behavior. His managerially oriented framework presents a cogent explanation of the varying performances of different firms in a particular industry's markets and consumers. At the corporate level, it explains why firms merge in function of their specific chains of activities (their "value chains"), in an imagery aligned with the shift of managerial accounting to activity-based accounting. Ostensibly accounting for consumer behavior through the market angle and partly clouded by his accounting imagery, Porter's approach subtly integrates some OT concepts and subsumes much of the notions of organizational and strategic fits.

Ironically, as academic developments are in the public domain and market opportunities are partially clouded from public view, Porter's framework partially fails to explain the differential in firms' abilities to successfully combine the marketing and intellectual tools seemingly available to all. As strategic management evolves independently from OT, what was conceived earlier as a minor inconsistency unworthy of painstaking analysis ([Mintzberg, 1989](#)) has moved to center stage. This has prodded scholars to continue pressing for further explanations. Interestingly, some modern approaches to market and customer orientation ([Ketchen et al., 2007](#)) also seek connections to the RBT.

Shifting focus from just the fit to the resources that fit

Recent scholarship shows that, occasionally, competitive advantage arises through chance events and might even be generated by random walks ([Denrell, 2004](#)); however, strategic thinkers prefer not to rely on serendipity alone, but to take an active role in determining the fate of their charges ([Ackoff, 1970](#); [Ansoff, 1965](#)) by being outwardly mindful.

The rise of the RBT in its RBV strand ([Penrose, 1959](#); [Rumelt, 1984](#); [Wernerfelt, 1984](#)) was an effort to address the apparent gap between what the strategic management literature suggests and what actually happens. Contrary to the traditional view, the RBT emphasizes the "heterogeneity of firms" ([Amit and Schoemaker, 1993](#)) or the "idiosyncratic firm attributes" ([Barney, 1991](#)). Barney formally identifies two assumptions implicit in the traditional school of strategic management that are in conflict with contemporary RBT:

- (1) all firms within an industry are identical in terms of the resources they control and the strategies they pursue; and
- (2) should resource heterogeneity arise in an industry, it will be short-lived, due to the accessibility and mobility of resources.

Because of its more robust explanations of differential performance, the RBT has largely supplanted the traditional strategic management school in the scholarly management literature.

Although its origins may arguably be traced to back Coase (1937) and certainly to Penrose (1959), implicitly emerging from the thought of several authors[5], this new rational vantage point was perhaps first formally stated as “the RBV” by Wernerfelt (1984) and Rumelt (1984). They proposed an analysis of firms in terms of their resources rather than in terms of their products. At first glance though, the distinction appears purely semantic, as the product at the output end of a production process can be thought of as merely the result of the resources at its input end. Is it possible then that the RBT is merely a trendy restatement of something that had been common knowledge in the field of strategy for decades?

It is enlightening to pause and reflect that this shift in focus parallels the product-versus-process debate in the field of manufacturing. The debate did not just generate reams of edifying prose, but allowed reflection on issues basic to that field. The RBT is similarly opening up new theoretical vistas. While far more than a trendy restatement of a traditional school of thought, many scholars agree that the RBT is not wholly revolutionary. Mahoney and Pandian (1992) promote the idea that the strength of the RBT is not so much that it is completely new. Rather, they describe it as something new in that it brings together the study of distinctive competencies (i.e. *supply-side behavior*), organizational economics and industrial organization analysis, three traditionally distinct aspects of the classical approach to strategy. In a similar vein, Rugman and Verbeke (2002) see the main contribution of the RBT as “[...] its ability to bring together several strands of research in economics, industrial organization, organization science and strategy itself”.

While Rumelt (1984) and Wernerfelt (1984) may have been the first to cohesively explain the RBT, it was left to Barney (1991) to be among the first who identified the conditions under which resources provide the economic rents due to sustainable competitive advantage. Resources, he stated, will only provide a sustainable competitive advantage if they are valuable, rare, inimitable and non-substitutable. According to this more restrictive definition of the concept of *resource*, the failure of one firm and the success of another in the same industry may no longer be explained just in terms of the commodity-like, widely available inputs.

Critique of the current form of the RBT

The circularity criticism in the literature

Despite the current popularity of the RBT in scholarly circles[6], it is not without its detractors. Among others, Priem and Butler (2001a, 2001b) present two primary criticisms of the RBT, namely, that it lacks some of the trappings of a fully developed theory and that it may even be flatly tautological. A full discussion of the methodological underpinnings of the RBT is beyond the scope of this synoptic paper of the new vision of management this decade will develop. We would be content to suggest that the former criticism primarily addresses the structure of the RBT and its apparent degree of “ripeness” as a theory rather than the validity of its contents.

As to the second, more damning criticism, the claims of tautology relate principally to Barney’s (1991) unsurprising position that resources must be valuable and rare to produce competitive advantage. The argument roughly states that having “value” as

defined by Barney is pretty much equivalent to offering the potential for competitive advantage; so if a resource does or even may provide competitive advantage, it is, *by definition*, valuable.

Barney (2001) critically responds to the tautology claims by arguing:

[...] the fact that Priem and Butler are able to restate parts of my 1991 argument in ways that make it tautological is not the same thing as demonstrating that the argument is, in fact, tautological.

In other words, Priem and Butler's claim of tautology may be true or false, but its merit rests entirely on how the concepts are defined. If value and competitive advantage are seen as exactly equivalent, then indeed the RBT is merely an identity, just as " $2 + 2 = 4$ " is an identity. If, however, they are interpreted as related but not equivalent concepts, Priem and Butler's claims of tautology are considerably weakened.

Broadening the discussion, Lado *et al.* (2006) and Schreyögg and Kliesch-Eberl (2007) concur with a paradoxical characterization of the RBT, and uncover some additional paradoxes beyond Priem and Butler's. Yet in defense of Barney and the RBT, Lado *et al.* point out that paradoxical thinking can open up new theoretical vistas. In another testament to the expected longevity of the RBT, Bowman and Ambrosini (2001) distinguish between various aspects of value as derived from the definitions of the classical economists. *Perceived use value* is defined by the customers on the basis on their perceptions of usefulness; *total monetary value* is the amount customers are willing to pay for the product; and *exchange value* is the amount transferred from the buyer to the seller for the perceived use. According to these definitions, the relationship between resource value and competitive advantage is quite far from being an identity, as perceived use value does not *necessarily* result in exchange value. Using this more sophisticated and appropriate terminology brings home that perceived-use value might have to be added to rarity, inimitability and non-substitutability as a fourth condition for obtaining sustainable exchange value.

In their article *Unraveling the Resource-Based Tangle*, Peteraf and Barney (2003, p. 314) offer updated definitions of competitive advantage and value. According to their definition, a firm has a "competitive advantage if it is able to create more economic value than the marginal (breakeven) competitor in its product market". Stated conditionally, if a firm offers economic value, then it has a competitive advantage. Peteraf and Barney also define economic value as the difference between perceived benefits to the purchaser and the economic cost to the firm[7]. So assuming economic costs account for all directly and indirectly attributable costs, a firm creating economic value is a profitable firm in a competitive environment, and a profitable firm in a competitive environment is one possessing a competitive advantage. Unfortunately, rather than moving the theory forward, this specific restatement by Peteraf and Barney does not quite dispose of the perception of tautology.

The internal orientation criticism

Another criticism actually predates the growth of the original RBV strand into the RBT of today. From the above brief descriptions, one should have gathered that OT deals primarily with the organization itself and not its "enacted environment" in the words of Weick (1979). As discussed earlier, the traditional SWOT-oriented school of strategy largely supplanted the OT perspective on management. This specifically strategic

school became an *outward-looking alternative* to the inward-looking OT. Paradoxically, as the popularity of the RBV kept rising and extended into the larger RBT, the externally oriented traditional strategy school gave way to this novel perspective, but without a widespread recognition of the RBV core as mostly internally oriented, should one care to scratch below the surface of RBT.

Could it thus be that the RBT is merely a throwback to the glory days of OT, as they both focus on internal organizational assets, skills and processes? Despite Michael Porter's tremendous influence on the strategy discipline and his recognition as the most influential scholar in the field of strategy (Barney, 2002), a large gap exists between his brand of traditional strategic theory and the currently popular form of RBT. While not constituting a full-fledged indictment of the RBT, the acclaim bestowed on Porter's ideas goes to highlight the role of the environment and temper the perceived supremacy of internalized resources in determining competitive advantage.

However, Barney's recognition of Porter's contribution reveals that the RBT may not be as insular and insulated from environmental considerations as the earlier theories of management. Indeed, both OT and the RBT look inside the firm, but there is a difference, and it is an essential one. While traditional OT's perspective can be entirely internal and detached from the external environment, the RBT promotes *looking inward from without!* This is definitely a strength in the constructivist sense, as it is an indication of how the theoretical framers of RBT continually resize their assumptions as recommended by Mir and Watson (2000).

Just resources or skilled capabilities?

The above consideration leads to a rather sober assessment of the current state of the RBT: what was once a weakness of OT unfortunately persists as a weakness of the RBT, namely, insufficient emphasis on the role of the external environment. This is one of the reasons why we believe that RBT has not yet reached its final stage of development, but is still being constructed in breadth and depth.

The reason why RBT beckons deepening is that another criticism of it is the lack of consensus on its basic terms. Despite broad agreement on the acceptability of the term RBT, there seems to a great deal of disagreement on what the *R* portion of the RBT actually entails. In addition to its infatuation with the term "resources", the contemporary literature is also rife with references to "assets", "competencies" and "capabilities". In some cases, these terms are used interchangeably; in others, hierarchically; while in still others, they are entirely independently of one another.

While Penrose's writings preceded the formal statement of the RBT by a number of decades, she is recognized by many as having provided its intellectual foundations. In an effort to place the RBT within the continuum of strategy literature, Mahoney and Pandian (1992) extensively cite her works dating from the middle part of the twentieth century. The point that, to provide rent, *resources too must be deployed* is also emphasized by contemporary authors (Lee, 2008).

As a case in point, Hall (1992, 1993) enumerates nine kinds of intangible resources. They even include items like intellectual property and employee know-how, which fall into two categories: company-based and people-based. Sustainable competitive advantage is not achieved through resource differentials, but rather through capability differentials, themselves enabled by the resources. Capabilities are further classified by Hall as assets or competencies, in turn those are subclassified even further.

As we are witnessing theory in the making, differences in perspective are being debated. In spite of a slightly different slant, Mahoney and Pandian (1992) also view capabilities as a function of resources. These RBT authors have to confront a vexing legacy issue: resources among competing firms may be quite homogenous, while performance among them may be quite different because of the differing competencies that determine the efficiency with which the resources are used. In the same vein, Amit and Schoemaker (1993) acknowledge that competitive advantage emanates, not directly from its resources, but from its capabilities. "Capabilities" for these authors refers to a firm's capacity to *deploy* resources. Therein lays a substantive difference: while a firm's resources can be traded, a firm's capabilities, which are based on exchanges of information through the firm's human capital, may not. Resources provide the tools to potentially achieve sustainable competitive advantage, but capabilities provide the know-how to best deploy the resources.

Complementing these views, yet in a sense contradicting them, Peteraf (1993) adds that resource heterogeneity is indeed a necessary condition to achieve competitive advantage. This new element deserves scrutiny. Undoubtedly, firms competing in the same industry must be different from one another if they hope to achieve competitive advantage, but does it really matter if we define this difference in terms of heterogeneous resources or heterogeneous capabilities stemming from homogeneous resources? Perhaps we might glean from the words of Peteraf (1993, p. 180) herself that the field has still not managed to sharply conceptualize such differences so as to use them in its theoretical development. She states: "A basic assumption of the resource-based work is that resource bundles and capabilities [...] are heterogeneous across firms". In the subsequent several sentences, she alternates between resources and capabilities, stating throughout that the superior firms will obtain the rents.

According to Schoemaker and Amit (1994), the difference between these two views may be *chronological* rather than logical or semantic. They assert that strategic assets bestow a company's competitive advantage, and strategic assets are composed of both resources and capabilities. Although they do not call it such, their interpretation of the RBV would be more akin to an asset-based view in which "assets" comprise both resources and capabilities. It is the job of the firm to convert general assets into specific assets and capabilities, a process in which there is a very strong temporal component.

Enter the dark side of resources

In a 1989 paper ostensibly promoting the RBT, Dierickx and Cool may actually have been the first to present both its strengths *and* weaknesses. They claim that resource bundles are used to achieve or protect privileged product-market positions. It is, in fact, the bundles of resources that lie at "the heart of the firm's competitive position". While promoting the importance of resources and resource bundles, Dierickx and Cool essentially develop the fundamental insight that more resources are needed to protect resources from erosion.

The art of resource-based strategic management consists of balancing the *maintenance costs*, associated with perpetuating the uniqueness of a product or firm, with the *opportunity costs* that embody the potential benefits of courses of action not taken. Yet, the emerging RBT theory should capture that investments to protect one's useable assets should be preferred to the false savings obtained by letting them erode. The relationship between the results of the initial investment in resources and

subsequent investment to protect those resources may take on different forms. Although they use the term “asset erosion”, [Dierickx and Cool \(1989\)](#) actually allude to the concept of “resource tailspin”, in which investments in new resources aim to protect failing current resources.

Except for [Leonard-Barton’s \(1992\)](#) concept of core rigidities, a point not heretofore stressed in the literature is that resource ownership can be a mixed blessing. However, while her concept of core rigidities was helpful at the time of its introduction, it fails to render the idea of the steady decay presented here because it is an organizational, *not* a material one. She views overcoming core rigidities as “ironing out the kinks” rather than reinvigorating a dated resource. Hence she suggests that, once the core rigidities are overcome, a period of continuously diminishing benefit may be followed by a period of rising benefit. Our view of the economic decline of resources suggests the *opposite* dynamics, namely, that a period of rising benefit may be followed by a period of diminishing benefit. The recent empirical work of [Combs et al. \(2011\)](#) on resource flexibility, describing the market-specificity of resource flexibility, provides indirect support for our proposition.

Turning to the intangible side of competitiveness, [Dougherty \(1992\)](#) presents knowledge as perishable. In this sense she too preceded us in acknowledging the mortality of sources of competitive advantage. Yet, in Dougherty’s presentation of the perishability of knowledge, the firm is entirely passive. In contrast, in our theorization, it is the firm that decides to terminate, alter or perpetuate the resource, and not forces external to it. This distinction is a significant one: Dougherty suggests that the *market* determines whether or not knowledge perishes, while we emphasize that *firms* constructively make strategic decisions regarding knowledge (or other – resources) under threat. Our view of this is germane with the ground-breaking contribution of [Kusunoki et al. \(1998\)](#) to both KBV and DC, which provides a dynamic vision of organizational knowledge as a filtering upwards of knowledge elements in constant motion.

More than a decade after Dougherty’s presentation of perishable knowledge, [Martin de Holan and Phillips \(2004\)](#) introduce a notion of memory decay at variance from Dougherty’s perishing knowledge due to an internal process of insufficient maintenance. Because they view knowledge decay or obsolescence as mostly resulting from environmental changes, they promote the facilitation of “organizational forgetting”. We concur, but propose that the pace of the gradual phase-out of the knowledge may be used for strategic benefit. In other words, unlearning need not entail a jettisoning of existing knowledge; rather, it may mirror-image the gradual phase-in of replacement knowledge.

Tightening the loose ends of the RBT?

Resource and capabilities dynamics – an integrative view

Ideally, organizational capabilities should become dynamic ([Teece et al., 1997](#); [Teece, 2007](#)). Extrapolating further we might ask: Should the resources be viewed as dynamic too? Attempting to fathom the theoretical underpinnings of the intriguing notion of resource tailspin adapted from [Dierickx and Cool \(1989\)](#), we respond to this question by introducing the concept of *resource spiral*. In this model of the RBT, a firm’s privileged position is successfully maintained by investing in resources to perpetuate their effectiveness. For nothing succeeds like success, and in a free-market economy, a

resource-rich firm often devises the capability to engage in an upward spiral in which its extra resources generate additional capabilities that fund or help generate newer additional resources, and so on.

Is this an extreme interpretation of [Schoemaker and Amit's \(1994\)](#) chronological view of the RBT? We propose that it has been implicit in the RBT all along. As commonly stated, the RBT might suggest that the-more-the-merrier principle should apply to resource stocks. In its emerging conventional wisdom, resources meeting [Barney's \(1991\)](#) criteria for sustainable competitive advantage generation are inherently good. This prompts us to advance the analogy that "a firm appetite for success is based on a hunger for competitive resources". In this anthropomorphic imagery, the successful firms are those that grow ever bigger and healthier by using the right resources, gathering in the process even more resources in each period.

Does the RBT tautologically explain firm success and not failure by refusing to consider obsolete implements as "resources"? Its traditional RBV core is informative, because it helps characterize the usefulness of resources. Not all resources meet Barney's requirements and not all of them are initially productive. The conventional RBV wisdom would presume that resources failing to meet Barney's requirements are, at worst, neutral. This overly optimistic view totally neglects the fact that, conversely, those resources with unsatisfied appetites for replacement, or at least preventive maintenance, become ever weaker and increasingly incapable of garnering their replacements. In short, they enter into a resource *tailspin* as envisioned by [Dierickx and Cool \(1989\)](#).

RBV theorization now has to extricate itself from the shackles of a purely descriptive mode and attempt a prescriptive approach. The stark contrast between the differing end results of initially similar situations beckons an analogy with probability theory. Depending on the initial layout of transition probabilities, in some stochastic processes such as Markov chains (or other "ergodic" processes), the passage of time brings a stark contrast: some states become increasingly recurrent, while others become gradually ever scarcer. We propose to capture this stochastic process by a visual model or analogy: the successful firms can be visualized as those whose "hunger for resources" is continually satisfied by constant renewals in the manner of an upward exponential resource spiral.

The other side of the coin, the darker side of this model of the RBV, is akin to the all-too-familiar *cycle of poverty* that afflicts under-developed countries: unsuccessful firms are those whose hunger for resources never translates into a generator of energy, but only into an ever-larger drain. The implication of this binary synoptic model of the RBV is that competitive battles are most likely to be won or lost earlier than previously envisaged by one's thoughtful marshalling of one's resources. In other words, it may be enlightening for the field to replace the concept of *strategic management* by the RBT-informed concept of *resource management*, especially in view of the fact that a segment of the literature ([Cyert and March, 1963](#); [Mishina et al., 2004](#)) is pointing to the importance of resource slack rather than the absolute quantity of resources. This is an important contribution to an actionable issue that has generally been underplayed: a side-benefit of visualizing the possibility of downward resource spirals is to explicitly acknowledge the importance of allowing for slack resources in practice.

Discussion and illustrations

In a discussion on technological change paralleling the binary model of the RBT proposed above, Tushman and Anderson (1986) refer to discontinuities as either “competence-enhancing” or “competence destroying”. An example of one such discontinuity is the emergence of the VHS as the dominant design for the home VCR. Beta, the proprietary Sony format for the VCR, was thought to be technologically superior. When this perception was widely held, Sony’s asset, the Beta format, provided the firm with a competitive advantage that was not easily imitable by industry competitors. Once the competing VHS format of JVC emerged as dominant (primarily because of complementarity, but a full discussion is beyond the scope of this paper), Sony’s unique competence was destroyed[8]. Even after the popularity of the VHS surpassed that of Beta, Sony chose to stay the course and continued to market the Beta exclusively. This example of a resource tailspin is a clear indication that resources are neither exclusively beneficial, nor are they likely to remain so over extended periods.

What remains unclear from this example, though, is the resource’s dual nature – that of an *asset* as well as a *liability*. In the case of Sony, Beta technology was no longer beneficial, and clearly there were associated maintenance and opportunity costs, but did the resource also become detrimental instead of just cumbersome? Clearly, the contribution of a resource to a firm’s competitive advantage may be positive in one period and neutral in the next; but can a formerly contributing resource possibly become a real liability?

To visualize what appears at first an unlikely 180° flip, perhaps the question is best answered by an example from the realm of armed conflict. Ordinarily we think of superiority of numbers as [one of] the decisive factors in war. In fact, superiority of numbers is so crucial in war that von Clausewitz (1966 translation) devoted an entire chapter, aptly named Superiority of Numbers, to the topic. Yet, he hedges this common wisdom by acknowledging that:

- more is not necessarily better; and
- more may indeed be *worse*.

In his words:

Another proof lies in a wonderful notion which haunted the heads of many critical historians, according to which there was a certain size of an army which was the best, a normal strength, beyond which the forces in excess were burdensome rather than serviceable von Clausewitz (1966, bk III, ch 8).

In the age of von Clausewitz, troop concentrations whose food and horse fodder requirements exceeded the capacity of the resources of the land they occupied were detrimental and unsustainable. More generally, examples of well-trained and equipped armies defeating larger but less well-designed forces abound in the historical annals of every continent[9].

Another example illustrating the notion of asset erosion, one somewhat reminiscent of the VCR case presented earlier, is that of the smartphone industry. Although not the first (IBM’s Simon is generally credited with that honor), Nokia smartphone devices were perceived to be the most innovative and were the largest sellers through mid-2010. Innovative phone features, or perhaps, the ability to “be innovative” created demand for Nokia products. Despite years of strong sales and its position as a market leader, Nokia’s

smartphone sales fell dramatically from 2010 to 2011, hastening a trend that has been in motion for the past two years – an eon in this particular industry with fast-paced technological change. As illustrated in Figure 1, in the second quarter of 2010, Nokia sold 23.8 million smartphone devices worldwide, while sales stood at only 16.7 million for the same quarter of the following year, representing a dramatic 30 per cent reduction. This loss of sales was even more pronounced when viewed in light of the dramatically increasing demand for smartphones as a whole. In the second quarter of 2010, Nokia devices accounted for 38 per cent of all smartphones sold, while the following year the figure stood at only 15 per cent, an even more dramatic 60 per cent reduction in market share (Business Wire, 2011).

As in the case of competing VHS and Beta platforms, Nokia smartphones relied on the Symbian operating system. Nokia’s competitors, except Apple and Blackberry, relied on the Android operating system. Until February of 2010, Symbian was not open-source. By contrast, Android, introduced in 2008 and distributed for free by Google to the device manufacturers, has always been open-source. In the era preceding smartphones, embedded phone features made particular devices attractive to consumers. In the era of smartphones, it is the “apps” or software applications that enhance the utility of the device. As Android was open-source from its inception, and readily accessible to third-party developers, the number and variety of Android-based

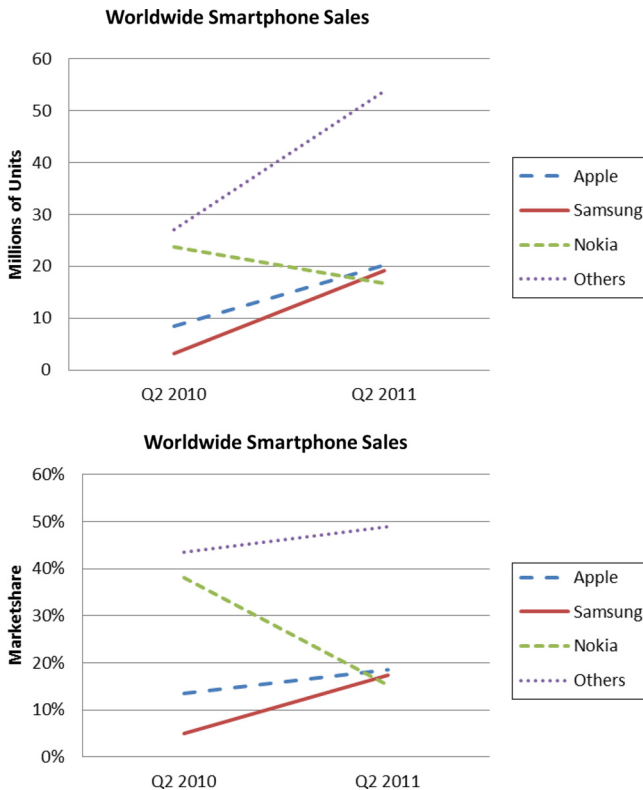


Figure 1.
World-wide
smartphone sales
and market share

“apps” far exceed the Symbian-based counterparts. Perhaps having learned from the painful lessons of Sony’s Beta decades earlier regarding the ambivalence of resources, Nokia recently announced that it would phase out its Symbian operating system that had in time decayed from an asset to a drag.

Assetization and asset erosion

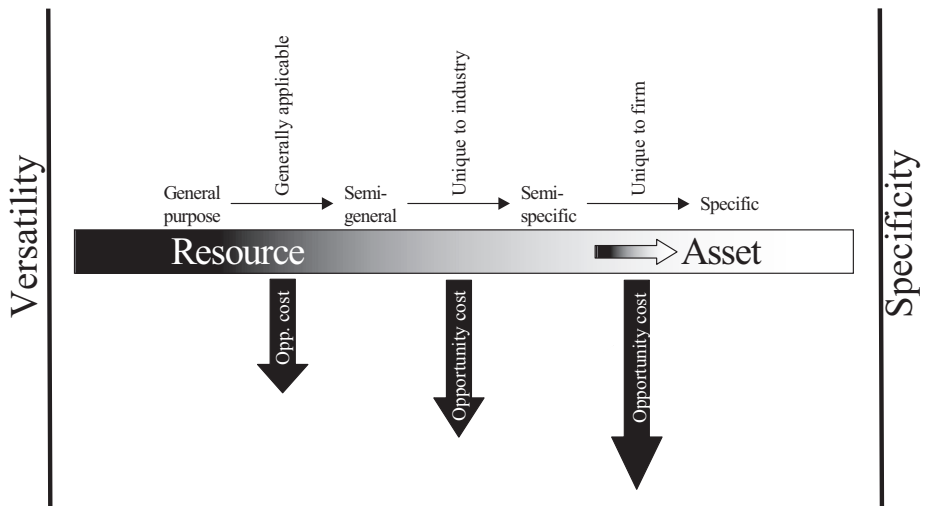
In light of the above discussion on the dual nature of resources, we propose for both resources and assets alternate definitions at variance with some authors’. The reason is that we concur with Miller (2003) that a theory of sustainable competitive advantage has to recognize the *asymmetry* of resources. Departing from the original concept of Wernerfelt (1984) and Teece *et al.* (1997), for whom a resource is the same as an asset specific to the firm, we propose that a distinction be drawn between an asset and a resources, and that it should be a function of the degree of *specificity in utilization* or “deployment” as termed by Lee (2008). A resource, according to the elementary economic definition, is a general-purpose input useful in a large variety of circumstances. A resource may enhance efficiency, but it will not provide rents in and of itself: a resource is not yet an asset, but it may become an asset. To become an asset, the resource must be adapted to a specific situation or set of circumstances; moreover, it has to be “personalized” to provide unique capabilities not possessed by one’s competitors.

Granted, the proprietary nature of assets specific to the innovative firm may be fleeting, and in short order, one company’s secret to success may become the industry standard. When this occurs, what was once sufficient for a competitive advantage becomes necessary in an arena of enhanced competition, but no longer sufficient for a competitive advantage. Dierickx and Cool (1989) call this process *asset erosion*: just as physical plants decay over time, intangible assets decay too. This may take the form of technological obsolescence, shifting customer preferences or any other time-dependent phenomenon. Beyond the interpretation of Dierickx and Cool, though, this erosion also includes information diffusion that causes proprietary or firm-specific assets to enter the public domain.

Figure 2 depicts our model of the process of “assetization” of resources as they gradually move from being general-purpose *resources* applicable to a variety of situations, to becoming specific to a single industry and finally *assets* specific only to a single firm. This process of assetization entails the transformation of the initially general resources into firm-specific (and often situation-specific) implements whose specialization entails a double penalty. First, *opportunity costs* are incurred all along the assetization process. In addition, this march toward greater usability is usually followed by the inevitable erosion that affects all assets, be they tangible or intangible. This is recognized in the operations management and manufacturing literature and by such RBT authors as Dierickx and Cool (1989). Second, *decay or preemptive maintenance costs* are also incurred as long as a resource or asset is owned. The extant RBT literature has mostly neglected this issue. However, the existence of direct as well as indirect erosion of resources and values is recognized in recent authors exploring the relationship of transaction – cost economics with the RBT, at least insofar as intangible resources are concerned (Foss and Foss, 2005).

The assetization of any new gadget is depicted as a rightward movement in Figure 2. A resource morphs into an asset as, over time, it migrates from the versatility to the

Figure 2.
Longitudinal
resource – asset
relationship



specificity ends of the spectrum. At the point that the resource becomes unique to a firm, it becomes an advantage-providing asset. There is no “free lunch” in economic theory any more than in strategy. Thus, as specificity increases, the opportunity costs of pursuing this particular asset increase. Just as Sony stood to *benefit* a great deal from the emergence of Beta as the dominant or sole technology, it stood to *lose* a great deal from its connection with Beta, as VHS became the dominant or sole technology.

To summarize with a metaphor, the upward march to power of resources as they are moved toward more useful assetization is shadowed by a darker side: their costly downward slide under the “twin evils” of opportunity cost and erosion. Sadly, there is no free lunch in strategic theory. Neither the full RBT nor its DC strand can claim to guarantee more than marginal advantages here and there. Still, battles can be won or lost due to the combination dynamics of a marginal advantage here with a marginal advantage there.

RBV-inherited limitations of the RBT

The RBT offers the advantage of an additional infusion of the economics of production, not just those of marketing, into the management field. Yet, like all approaches, it has its constraints and limitations, mostly inherited from its RBV origins. As discussed earlier, some of its perceived shortcomings have been shown to be unfounded. But two of its weaknesses appear to persist:

- (1) the lack of attention it pays to the issue of strategic positioning; and
- (2) its neglect of the potential downside of resources.

Although the former issue has been frontally tackled by such frameworks as [Porter’s \(1980\)](#) generic strategies, its linkage to the RBT has remained loose and indirect. The dilemma is the following: focusing exclusively on strategic positioning neglects the importance of internal resources, while focusing exclusively on resources denies the role of positioning.

By looking at the resourceful entrails of firms from the perspective of ammunitions needed for their competitive battlegrounds, we model the specificity of the resource-to-asset spectrum in Figure 2. The clarification it offers promises to offset the first shortcoming of the RBT, namely, its lack of relation to strategic positioning. The RBT has been enumerating a list of incomplete conditions that must be met for a resource to provide competitive advantage. To these we are adding the *double specificity* (firm-wise and situation-wise) of assets, and we thus indirectly inform the issue of business positioning for competitive advantage.

Regarding the RBT's second shortcoming, scholarly management research has hitherto been deficient in addressing the downside of resources. Adding to the foundations laid a quarter of a century ago by Dierickx and Cool, subsequent scholars (Leonard-Barton, 1992; Dougherty, 1992; Martin de Holan and Phillips, 2004) have considered various negative aspects of resources, but none has explored the full significance of this phenomenon. The downside of resources is not merely a marginal factor to be casually addressed, but rather a significant and ubiquitous force worthy of strategic consideration. In this paper, we urge the field to fully recognize the "heft" of the downside of resources by developing a realistic model of the way the downward slide is likely to occur in practice.

Some authors point to the importance of resource excess and slack (Cyert and March, 1963; Mishina *et al.*, 2004). In the context of the RBT, we might ask whether entrepreneurially driven resource abundance is sufficient to garner competitive advantage. But the competitive advantage provided by innovativeness or entrepreneurship is only sustainable as long as demand persists, and the savings or added revenues exceed the cost of research and development. Even entrepreneurial innovativeness may be double-edged. In our terminology, properly maintained innovativeness may induce a resource spiral, innovativeness gone awry may induce a resource tailspin. To put it in popular tautological parlance, even "too much *resource* isn't good" because, regardless of the outcome, the cultivation of innovation as a resource introduces another "mouth to feed" into the existing family of resources to be maintained by the firm. Still, the basic goal of the RBT is a sound one: it is to instill a strong enough affinity for one's resources to want to utilize them to their full extent, but not so strong a reverence as to develop an unhealthy attachment to any particular form or kind.

Overcoming the RBV-inherited limitations of the RBT

Mercifully, there might be some domains in which the harsh reality of a downside to resources and capabilities may either not exist or exist in highly attenuated forms. While the domains of intellectual capital (Subramaniam and Youndt, 2005) and of information technology resources (Kim and Mahoney, 2006) are likely to lend themselves to the phenomenon of assetization in the same way as other intangible resources, the jury is still out on whether asset erosion affects them in the general fashion or whether the slope of the decay is so mild as to be negligible in practice.

The challenges remain sizable but progress is being made. To the earlier substantive description of the modalities of organizational capabilities provided by Kusunoki *et al.* (1998), Teece (2007) has recently added a detailed view of the organizational capability management process, from its sensing front end to its opportunity seizing phase and all the way to its threat transforming end. This is a fitting illustration of our

characterization that the RBT, in addition of taking stock of the economics of production, provides some of the benefit of OT by offering a way to *look inward from without*. In a parallel of sorts, the more technical work of Warren (2002) at the London Business School provides engineering-oriented operational descriptions of the inner workings of knowledge-based resources and capabilities.

What of innovation-driven technological change and ensuing entrepreneurial activities? As the RBT overcomes some of its known hurdles in its march forward and upward, newer ones become visible from its enhanced vantage point. Tushman and Anderson (1986) identify four possible explanations for technological change. Technological change occurs as a result of evolution, chance, historical necessity or economic demand and growth. Indeed, no single explanation can account for competence-destroying discontinuities, and all may be equally valid. From the perspective of strategic management, this is troubling, as it suggests that duration of “sustainable” competitive advantage is unpredictable and, worse still, beyond the control of any firm or organization. Under the Schumpeterian hyper-competitive pressures of today (Wiggins and Ruefli, 2005), future research should turn to addressing how firms should best prepare themselves for competence-destroying uncertainties – or else usher in the “age of temporary advantage” in the words of D’Aveni *et al.* (2010).

Fortunately, the DC and RBV strands of the RBT have turned to addressing this problem in earnest. In addition to the two references just cited, others are coming on stream (Sirmon *et al.*, 2010). Clearly, managing temporary advantage is of paramount importance to extending the RBT into the growing field of entrepreneurship studies. The flexibility of the RBT is such that this issue is now being frontally addressed; as an example one could cite the exploratory study of technology ventures by Gruber *et al.* (2010). Even more pertinent is the study of Foss *et al.* that takes head-on the task of integrating resource-based and entrepreneurial theories (2008).

Future research directions

Resulting from the perceived merger of RBV, KBV and DC, the RBT has become the dominant paradigm in strategy. It could be visualized as composed of a central RBV stolid and slow-moving center, with one fast-moving wing and a second faster-moving still. Its slowest wing, the right one, is the partly formal or quantitative KBV. Because it is already heavily networked and overlapping with the field of knowledge management, the KBV strand within the RBT has been evolving gradually and steadily (Conner and Prahalad, 1996; Kim and Mahoney, 2006). As the RBT continues being constructed, because of its inclusion of formal analytical tools, the knowledge-based strand will continue providing a solid connection to the rationalistic end of the management theory spectrum. Yet, this constant accomplishment is seldom brought to light; for not making too many ripples, it is being taken for granted and only generating a moderate amount of research in academy circles.

The vitality of the RBT stems from the fact that, at the other end of the management theory spectrum, its behaviorally oriented left wing is forging ahead as its leading edge. Several examples of the broad scope of DC-driven publications were given in our introduction. The treatment of capability life cycles found in Helfat and Peteraf (2003) and of configurations provided by Lavie (2006), and the synoptic view offered by Barreto (2010), portend that the broad reach of this leading edge of RBT promises considerable longevity. It is a testament to the usefulness and vitality of the RBT that its

DC strand can take on the puzzling yet eminently practical issue of the interplay of strengths and weaknesses and yet find sensible and actionable results. For example, [Sirmon et al. \(2010\)](#) find that firms combining high capability strengths with high weaknesses in volatile or intensely competitive markets exhibit relative variance in their performance. On the negative side, they also find that achieving even temporary advantage may *not* be as simple as previously thought.

This tempered success of the RBT is begging for frequent *constructive* reappraisals involving the values of researchers as well as the needs and biases of management practitioners ([Mir and Watson, 2000](#)). Some authors ponder what guidance it provides regarding the roles of managers ([Augier and Teece, 2009](#)), while others directly attempt to assess its practicality. On this latter point, [Arend and Lévesque \(2010\)](#) find only partial empirical support for it. They question the ease with which strategies based on the *ex ante* identification of strategic assets can be carried out in practice. Worse still, the paradoxes pointed out by [Lado et al. \(2006\)](#) and the contradictions surfaced by [Schreyögg and Kliesch-Eberl \(2007\)](#) add an additional shadow to the conceptual cloud initially seen by [Priem and Butler \(2001a, 2001b\)](#). In that context, partial applicability seems less disquieting when evolving toward greater applicability.

It may be important at this juncture to recall that management theories are not only deductive systems, as described by classical quantitative methodologists ([Luce and Raiffa, 1957](#); [Ackoff, 1962](#)), but also sense-making interpretative systems ([Daft and Weick, 1984](#)). It is in this sense that [Mahoney and Pandian \(1992\)](#) talk of the “*conversation of strategic management*”. In this regard, three approaches appear promising.

First, a needed development would be the investigation of what gives rise to resources. One such effort under way by [Ahuja and Katila \(2004\)](#) traces the origins of resources to scientific and geographic searches. Clearly such “horizontal” or spatial and “vertical” or in-depth search paths do much for spurring technological innovativeness and capabilities. It thus appears that the field’s current focus on the RBT is generating analytical queries suggestive of fruitful research avenues.

A second approach, exemplified by [Drnevich and Kriauciunas \(2011\)](#), separates DC from ordinary ones. Essentially, as the assetization of resources implies a sort of ossification and immobilization of them, theorists are pondering on the ways by which organizations may remain nimble in the face of constantly shifting threats – or “agile” as per the term popularized by a segment of the consulting profession. To this effect, distinguishing between the agility of the *entire system* as opposed to resource- or *asset-specific agilities* might be a good avenue for future research.

To broaden our horizons, we should pick up [Winter’s \(2003\)](#) challenge and puzzle out the connection between higher-order capabilities and problem solving. Actually, *formal problem solving* acquired full disciplinary status several decades ago when it became known as the field of operations research or management science and has assisted numerous militaries and industries in efficiently solving well-defined resource allocation puzzles in relatively stable environments. In unstable or hypercompetitive environments, *problem framing* ([Checkland, 1981](#); [Larson, 2002](#)) may be one avenue to develop intellectual DC in an organization.

Finally, even though a great deal has been written about *environmental risk* and how to avert it in the various quantitative branches of the decision-theoretic literature, the general management literature has not fully taken notice of asset slack as a way to deal

with various forms of risk, in spite of the pioneering work of Cyert and March (1963). However, the still novel approach of *scenario planning* (Eden and Ackermann, 1998; Georgantzis and Acar, 1995; Schoemaker, 2002; Schwartz, 1991) offers an indirect but fruitful avenue for research linking the control of assetization to risk management. Applying the scenario approach to decisions regarding investment in resources might enable managers to better assess the potential for competitive advantage of each resource, as well as to estimate the longevity of the assets each would yield.

Conclusion

Because it is the result of several swings of the management theory pendulum, as well as its capacity for integrating strands spanning a broad range stretching from rationalistic (Kunc and Morecroft, 2010; Cabantous and Gond, 2011) to behavioristic approaches (Hodgkinson and Healy, 2011; Levinthal, 2011), there is reason to believe that the RBT and its derivatives will continue being constructed into the integrative paradigm of strategic theory. Our discussion depicts it as one in which the perennial dictates of rationalism and behaviorism come together to provide a rich tapestry that can guide both management research and applications.

First on the scene, OT looked primarily inward to the development of organizational skills and sound structures to utilize them. Then, the classical or traditional school of strategic management introduced into the strategic equation, the environmental considerations overlooked by OT. While this swing of the pendulum filled in many of the gaps of OT regarding the outward positioning of a firm and its products, by stressing the environment exclusively, the strategy school created a distortion in downplaying of the role of the organization. Despite the criticism of the RBT that flares up occasionally in the scholarly literature, we estimate that it will stand the test of time because it caused the pendulum to swing back toward *an externally generated internal focus*. This view of the RBT seems to be partially corroborated by Foss and Foss's (2005) inquiry into potential connections with transaction-cost economics.

The present paper contributes to the debate surrounding the RBT (Barney, 2001, 2002; Peteraf and Barney, 2003; Priem and Butler, 2001a, 2001b) by casting it into a framework that presents its substantive strengths as well as its weaknesses. One aspect of the RBT that remains somewhat troubling is the exact relationship between resources and competitive advantage. We contribute the proposition that, despite their ability to provide competitive advantage for a time, resources resemble coins in that they inherently possess a flip side. They may both build and destroy competencies. The continuing challenge has been to determine under what conditions assets are beneficial and, conversely, under what conditions resources may become detrimental. It should be met by focused studies as well as a constructive dialectic between researchers and practitioners belonging to the current three strands of the RBT, periodically contributing synoptic reappraisals of the state of the art such as this one.

Although it may first have been uttered in a different context, the "no free lunch" principle is wholly applicable to the relationship between resources and competitive advantage. This paper introduces the notion of virtuous and vicious resource spirals that could spin in and out of control. To contribute a conceptual tool for better management, we put forth *a continuum of specificity for assets*. As resources are modified to respond to the specific needs of the firm, they become assetized into

situation- and firm-specific molds. The more specific the asset, the greater its value to the firm, and hence the greater the ensuing competitive advantage.

But with dependence comes reliance, and with reliance comes inflexibility. As with Sony's past adherence to a single VCR format, and Nokia's more recent reliance on the Symbian operating system, that which enables rapid ascent may just as readily trigger rapid decline under changed conditions. Awareness of the double-edged nature of resources only highlights the need for clearer frameworks, to more accurately assess when "turning the tables" by resource repositioning might instead turn assets into liabilities. Further work on the assetization of resources and the connection of DC to problem framing and solving (Drnevich and Kriauciunas, 2011; Winter, 2003; Sirmon *et al.*, 2010; Teece, 2007) may be needed. Also, analyzing documented change scenarios would be germane to studying how to promote upward resource spirals while avoiding the possible pitfalls of resource tailspins.

Notes

1. The other three perspectives of Astley and Van de Ven (1983) being "natural selection", the "collective-action view" and the "system-structural" view.
2. For the sake of brevity, we forgo here a reference to the much-cited classic by Lawrence and Lorsch (1967); the reason being that it is more organizationally oriented rather than quantitatively oriented toward strategic content.
3. While a full discussion on rents is beyond the scope of this paper, rent in this context connotes *economic rents*, or returns above and beyond costs of production factors or inputs. For a discussion on various types of rents, their definitions and their role in strategy formulation, see Mahoney and Pandian (1992), Peteraf (1993) and Amit and Schoemaker (1993).
4. In an apparently similar characterization, Teece *et al.* (1997) also recognize a traditional school and a newer school, each consisting of two alternative paradigms. Their traditional school consists of the competitive forces approach as well as the strategic conflict approach. Their newer school consists of two variant approaches to competitive advantage, the RBV and the DC approach. These authors' fine-grained dichotomy now appears dated in view of the hindsight provided by the more recent study of Acedo *et al.* (2006).
5. The notion of resource-based advantages does not appear foreign to the thought of Teece and Winter.
6. Popularity may be quite difficult to measure, but if the number of published articles favorable to this perspective may be used as a surrogate, the RBT is currently very much in favor.
7. It is interesting to note that Peteraf and Barney (2003, p. 318) use *value* and *economic value* interchangeably; this is in spite of Bowman and Ambrosini's defense of Barney's earlier "unclear" use of the term value.
8. A full discussion of the emergence of VHS as the dominant design and the decline of Beta can be found in comprehensive historical perspective on the matter by Cusumano *et al.* (1992).
9. A famous example known to von Clausewitz was the defeat of Napoleon's invading vast coalition army by the smaller but better-supplied Russian army in 1812. The various colonial wars also offer numerous examples of this principle.

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