STRATEGY DYNAMICS AND THE THEORY OF THE FIRM: HOMAGE TO RICHARD RUMELT

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ABSTRACT

Richard Rumelt helped pioneer many key ideas in the field of strategic management, including how the ownership of unique bundles of resources determines competitive outcomes, how isolating mechanisms protect rent streams, and how entrepreneurship drives the firm's choices of markets and resources. He chose not to build these insights into an integrated framework. However, his perspective on strategy and his emphasis on coherent actions for the firm is both complementary to and connected with the concept of organizational capabilities. The dynamic capabilities framework builds on Rumelt's work and can serve as a basis for advancing the strategic theory of the firm on which Rumelt began work in the 1980s.

Keywords: Dynamic capabilities; entrepreneurship; Richard Rumelt; strategy; theory of the firm

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I. INTRODUCTION

Richard Rumelt is one of the best critical thinkers (strategic) management has ever had, providing penetrating insights into management issues for over 50 years. He brings the keen analytic mind of an engineer to fundamental questions in the field. His acerbic comments and quips are always memorable. He continues to contribute to the field as a researcher, teacher, and commentator.

In recent years, Richard has focused on fixing wrongs. He has done a good job of reminding business leaders that preparing the annual financial plan does not constitute a strategy process. Rather, strategy is about perceiving changes in the environment and positioning one's enterprise appropriately.

A major point I will make with this paper is how consistent Rumelt's ideas about strategy are with the dynamic capabilities framework (Teece, Pisano, and Shuen, 1997; Teece, 2007; Teece, 2014). Had he been so inclined, he could have developed his ideas into something similar. In fact, he made steps toward such an effort in 1984, with "Towards a Strategic Theory of the Firm". But in that article, he chose to pursue a line of mathematical modeling that was never going to support the richness of his understanding.

In this paper, I start with some of Rumelt's relatively recent thinking on entrepreneurship and strategy to show its compatibility with the dynamic capabilities framework. I then move back to earlier work where he laid out some of his key ideas, which I also view through the lens of capability theory. I then jump forward to his 2011 practitioner-oriented book on strategy, with its useful model of the three-stage strategy kernel. Finally, I revisit and extend his earlier work on a strategic theory of the firm.

II. THE MCKINSEY INTERVIEW

There are quite a few places where Richard Rumelt's more profound side reveals its presence, such as his 2007 McKinsey interview conducted by my former student Dan Lovallo (Lovallo and Mendonca, 2007). There, Rumelt addresses the fundamental questions in strategic management: how firm-level competitive advantage is built and maintained.

Rumelt sees two ways to achieve competitive advantage: (1) you "invent your way to success," or (2) you "exploit some change in your environment—in technology, consumer tastes, laws, resource prices, or competitive behavior—and ride that change with quickness and skill" (p.3). There is no simple algorithm because neither of these paths can operate on a regular schedule due to uncertainty with respect to both technological innovation and future market conditions.

He is quite clear about the underlying capabilities that are needed for either path: "There is no substitute for entrepreneurial insight, but almost all innovation flows from the unexpected contribution of two or more things, so companies need access to and, in some cases, control over the right knowledge and skill pools" (p.5).

I will pause here to note that these quotes also describe fundamental elements of the dynamic capabilities framework that I was still fleshing out at that time (Teece and Pisano, 1994; Teece, 2007). In my 2007 article, I identified three key sets of dynamic capabilities: "sensing", "seizing", and "transforming." Rumelt's "invent" path relies on R&D or some other form of finding new combinations, which is part of the activities that fall under what I call sensing and sensemaking.

The “exploitation-of-change” path involves, first, sensing potentially valuable changes, then seizing the best opportunities which have been recognized.

Rumelt’s placement of the entrepreneur (or the entrepreneurial manager) at the heart of the competitive enterprise also captures a key aspect of dynamic capabilities. I have repeatedly explained in my scholarly and practitioner writing how dynamic capabilities represent a sort of symbiosis between the entrepreneurial manager and the capabilities embedded in the organization (e.g., Teece, 2012, 2016). But, in some sense, I was climbing a hill where Rumelt’s pennant was already planted, even if it was barely fluttering.

In the 2007 interview, he was asked the entrepreneur-related question “So how do you know which changes are important and which resources to combine?” His reply is “That’s a very tough question. It is a key issue—the next frontier. And it’s an underrepresented, underwritten about, and under-understood. I call it ‘strategy dynamics.’” Of course, these two elements are what I try to capture in “sensing” and “seizing” mentioned above.

Rumelt goes on to define strategy dynamics in terms of how a firm or an industry responds to exogenous change:

> In the modern business world, there are earthquakes all the time that quickly take the low ground and raise it high and, at the same time, submerge some mountain peaks below water. Strategy dynamics studies how those changes would shift each dimension of an industry. Would the industry become more concentrated or less? More integrated or less? Would there be more product differentiation or less? More segmentation or less? Given consumer desires and available technologies, how should the industry or business look in, say, ten years? Where are the economic forces trying to take you? Should your strategy ride those forces or fight them? (p.6)

What Rumelt has in mind with “strategy dynamics” is something considerably more active than the static approach typical of the resource-based view of competitive advantage (Barney, 1991; Peteraf and Barney, 2003) and also more change-oriented than evolutionary theories of the firm, which emphasize adaptive behavior (e.g., Dosi and Nelson, 1994). Dynamic capabilities also began as an effort to bring a forward-looking approach to strategic management (see, e.g., Teece, 2018, p.365). In short, “strategy dynamics” is very similar to dynamic capabilities, namely, the firm’s ability to transform itself proactively in response to a changing environment.[2]

However, Rumelt didn’t seem to have theory-building in mind in 2007. Instead of any over-arching model, he focuses on “tools and exercises” such as “value denials.” (p.6)

Another hallmark of Richard Rumelt is that he can segue easily from strategic management to general management. The same McKinsey interview led to the articulation of an insightful theory of uncertainty management which is worthy of further development:

> The most important job of any manager is to break down a situation into challenges that subordinates can handle. In essence, the manager absorbs a good chunk of the ambiguity in the situation and gives much less ambiguous

[2] In my dynamic capabilities research, I have tried to keep “strategy” (management’s choices for going to market and countering rivals) separate from dynamic capabilities (the identification of opportunities, the development of business models, and the alignment of the organization). See Teece (2014).

> problems to others. The CEO diffuses the business problem for everyone else. (p.9)

This insight is brilliant and is likely true for leaders in any setting—business, political, or military.

He also has keen insight into organizational competencies (which, in the dynamic capabilities framework, are known as ordinary capabilities). He recognizes that strong ordinary capabilities can "give you a sustainable advantage for a certain period of time" (p.10), implying that without entrepreneurial insight (in his words) or strong dynamic capabilities (in mine) they will not be sufficient for building long-term competitive advantage.

The interview is representative of Rumelt's work in that it encompasses keen insights across a broad range of management topics, but without any theoretical lattice to unite them. Many of the landmark studies that Rumelt published in the 1980s have yet to be incorporated into a comprehensive theory by Richard or by the field. The opportunity is palpable, and this tribute endeavors to initiate the process.

III. RUMELT'S FUNDAMENTAL CONTRIBUTIONS OF THE 1980s

In the 1980s, Rumelt published a series of papers presenting ideas that have become touchstones in strategic management.

One of his concerns has long been the sources of inter-firm heterogeneity. With training in electrical engineering and business studies, he could see the flaws in the generic model of the firm used in neoclassical economics. His early explanations for firm distinctiveness include causal ambiguity (Lippman and Rumelt, 1982) and heterogeneous firm resources (Rumelt, 1984).

Yet he was already looking to entrepreneurship as a more fundamental source of distinctiveness. In his 1984 article, "Towards a Strategic Theory of the Firm," he noted that "resource heterogeneity is ... an endogenous creation of economic actors," by which he means "entrepreneurial activity" (p.561). This encompassed top management's role "to adjust and renew these resources and relationships as time, competition, and change erode their value" (Rumelt, 1984, p.558). He had thus already hit on fundamental aspects of the initial definition of dynamic capabilities: "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano, and Shuen, 1997, p.516). This put him ahead of the now-influential "resource-based view" of the firm, which was just taking shape at that time (e.g., Wernerfelt, 1984) even as his concept of "isolating mechanisms" (discussed below) became one of its cornerstones (Mahoney and Pandian, 1992).[3] Resources are a stock, not a flow; they must be constantly renewed, especially in technologically volatile, digitalized sectors where there is deep uncertainty. Dynamic capabilities are a high-level resource that guides the deployment and renewal of other enterprise resources as circumstances change.

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[3] Success has many fathers, and I note my own parentage of the resource-based view by way of my 1982 article on the multiproduct firm (Teece, 1982), which familiarized strategic management scholars with the economist Edith Penrose's ideas on the relationship between resources and firm growth (Kor and Mahoney, 2004).

One of the very helpful and ancillary attributes of this early foray into the sources of competitive advantage was Rumelt's exploration of the factors contributing to imperfect competition. He noted that "The traditional model of industry in industrial organization is taken from oligopoly theory and remains that of identical firms or firms that are homogeneous but for scale" (Rumelt, 1984, p.559). Most famously, Porter's "Five Forces" model of competition was built on this same infrastructure, which risked reducing strategy to a matter of choosing the right industry (Porter, 1980).

Rumelt should get more credit for steering the field of strategy away from its roots in the Mason-Bain industrial economics tradition. Rumelt was one of the few scholars reminding everyone that the real action was not at the industry level but at the firm level, and that intra-industry performance variability was high. Firm-level heterogeneity was ubiquitous and semi-permanent. Coke was not Pepsi, and Westinghouse wasn't General Electric. They were each very different, and the differences were at the very core of what gave the field of strategic management its raison d'être.

Lippman and Rumelt (1982) presented a model in which heterogeneous firms emerged due to uncertainty. Uncertainty plays a significant role in Rumelt's narratives (as it does in dynamic capabilities; see Teece, Peteraf, and Leih, 2016). It is not just the uncertainty associated with discovery and innovation that he highlights. It is also uncertainty arising from the origins of excellence in the performance of a product or process. Lippman and Rumelt (1982) called this "causal ambiguity." It is a feature of complex systems (Sterman, 1994). Over time, I've come to think of not just the firm but its ecosystem and perhaps its industry as part of such a system (Teece, 2018).

In essence, causal ambiguity results in uncertainty about the influences among actions, activities, and results so that competitors cannot readily imitate an innovator's activities and compete "rents" or profits away. The presence of causal ambiguity alone can thus potentially allow an innovating firm to escape the zero-profit trap (i.e., an industry equilibrium in which no entrepreneurial rents are earned).

Put in neoclassical economic terms, the nature of the firm's "production function" is anything but transparent and known to all; it's often quite opaque to outsiders—and possibly even to insiders. This impacts what I have called the "appropriability regime" (Teece, 1986). Appropriability could be strong not only because of good intellectual property protection, but also because imitation proves to be hard.

In a subsequent article, Rumelt expanded beyond causal ambiguity as a bar to imitation to a more general list of "isolating mechanisms" that maintain different outcomes among firms within an industry (Rumelt, 1984). This was an intellectual leap beyond the Mason-Bain entry barriers that informed Porter's (1980) industry-level model of competition. It also goes beyond the mobility barriers concept that Caves and Porter (1977) put forth as creating sub-groups within industries.

Rumelt crafted a true firm-level approach. His initial list of isolating mechanisms was Causal ambiguity, Specialized assets, Switching and search costs, Consumer and producer learning, Team-embodied skills, Unique resources, Special information, Patents and trademarks, Reputation and image, and Legal restrictions on entry (Rumelt, 1984, p.568). None of these are original to Rumelt nor did he claim otherwise. The breakthrough was in identifying them as "phenomena that limit the ex post equilibration of rents among individual firms" (p. 567).

Rumelt unpacked the idea of economic rent in his chapter on "Theory, Strategy & Entrepreneurship"(1987).[4] In that article, he provided both a detailed analysis of the nature of entrepreneurial rents and a compelling description of the entrepreneurial process in large organizations, with all its bureaucratic and incentive challenges.

In analyzing the sources of economic rent, Rumelt noted that a transaction cost perspective provided insight into whether particular scarce resources/assets should be rented or owned. Ownership would generate economic rents only if the asset was specialized (and not, therefore, subject to perfect competition). Ricardian rents stemming from bottleneck (specialized and scarce) assets can thus be a source of profits.

Entrepreneurial rents, by contrast, arise through new combinations of resources under uncertainty.[5] The success of an innovative product or service leads to a change in relative prices. Rumelt defines an entrepreneurial rent as the difference between the venture's *ex post* value and its *ex ante* cost of resources. Entrepreneurial discovery can happen in many ways, e.g., through R&D, mineral exploitation, or the creation of new methods for making or distributing a product or service. Because not all "new combinations" are protected by intellectual property rights, the use of Isolating mechanisms are critical to protecting the resulting rent stream.

It seemed probable that Rumelt would eventually combine his insights into a comprehensive theory or framework. I noted in the introductory chapter to the book in which his 1987 article appeared that Rumelt was advancing the proposition that "strategy researchers need to create, develop, and test theories of entrepreneurship" to explain the growth and profitability of the business enterprise (Teece, 1987a, p.13). Yet he somehow never built an edifice on the foundation stones he laid.

The most notable gap is an answer to the deeper question of the sources of entrepreneurial rent. Rumelt's treatment in 1987 was quite cursory, and it boils down to the "entrepreneurial discovery of resource value" (p.144). There is subsequent discussion of the organizational context of entrepreneurial activity, but it is not well integrated with the earlier section on rents. In short, the chapter presents a useful compendium of ideas and concepts, but there is no framework as such.

By treating innovation and entrepreneurship as largely exogenous to strategy, he perhaps unintentionally reinforced the static nature of the resource-based view of the firm that he was toying with at the time. The dynamic capabilities framework that emerged in the 90s was explicitly designed to break this mold by being more dynamic and focusing on the ability of firms to develop new capabilities (Teece, Pisano, and Shuen, 1997).[6]

This is not to detract from Rumelt's accomplishments. In fact, I've tried to show that he had advanced many elements of the dynamic capabilities framework long before others. However, his primary interest was not to construct theory but to impact practice.

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[4] The chapter first appeared in *The Competitive Challenge* (Teece, 1987b), which I edited from a series of presentations by Rumelt and others in the Transamerica Lecture series at the School of Business, UC Berkeley in 1984-85 on the general topic of "Strategy and Organization for Industrial Innovation and Renewal."

[5] The differences in these sources of rent have immense public policy relevance, as discussed in Teece and Coleman (1998).

[6] See also Conner (1991).

IV. GOOD STRATEGY, BAD STRATEGY, AND CAPABILITIES

In one of his more recent books, *Good Strategy/Bad Strategy* (2011), Rumelt presented a parsimonious model of strategy. While the book was addressed to practitioners, its theoretical core paralleled dynamic capabilities in important ways.

The book's content distilled his previous scholarship. He had noted many years earlier that "strategy can neither be formulated nor adjusted to changing circumstances without a process of strategy evaluation" (Rumelt, 1980). Criteria for good strategy included consistency, consensus, advantage, and feasibility.

Rumelt is, in fact, particularly passionate about trying to spotlight and crush bad practices, including the simple inability of some executives to choose and prioritize. He notes that too many firms anoint a dog's breakfast of strategic objectives that are certainly not a clear-eyed strategy. He describes "bad strategy" as full of "fluff" (grandiose or obscure language) and lacking any recognition of the challenge to be addressed (Rumelt, 2011, p.32). Too often, executives mistake dreams and aspirations for strategy. Rumelt reminds us that those are goals, and strategy is about how to get there.

In the book, Rumelt overcame his reluctance to build a framework by presenting a very helpful tool: the tripartite strategy "kernel." A "good strategy" is a targeted solution to a problem that has been identified. The strategy must have at its core a diagnosis, a guiding policy, and a plan for coherent action. The three steps are sequential:

> The guiding policy specifies the approach to dealing with the obstacles called out in the diagnosis. It is like a signpost, marking the direction forward but not defining the details of the trip. Coherent actions are feasible coordinated policies, resource commitments, and actions designed to carry out the guiding policy. (Rumelt, 2011, p.7)

Table 1 is an example of the kernel as one might see it applied to Elon Musk's SpaceX.

In designing his kernel, Rumelt addressed a big question: what are the key components of good strategy? But he deliberately sidestepped what I believe is the grandest and most fundamental question in the field of strategic management, namely: what are the foundations of competitive advantage?[7] In contrast, the dynamic capabilities framework is more ambitious and seeks to provide a structured way to capture the key conceptual building blocks of what it takes to build durable competitive advantage. The answer to this question depends on much more than strategy.

[7] This is related to the question of why firms differ. See Rumelt, Schendel, and Teece (1994).

TABLE 1: SpaceX Example of the Kernel

Diagnosis	Guiding Policy	Coherent Action
Need to make humans an interplanetary species to avoid annihilation. Reusable rockets can dramatically lower costs.	Sell launch services to fund design & development	Develop and test the new rocketry components. Start small, scale up, and avoid the existing defense contractors whose technologies are outmoded and too expensive.

In particular, one cannot formulate an efficacious strategy without considering the capabilities required to implement it successfully. Put differently, a good strategy without strong capabilities won't deliver competitive advantage. Rumelt actually says as much in a less general way: "a good product-market strategy is useless if important competencies... are absent and their development is blocked" (Rumelt, 2011, p.210).

Earlier in the book, he elevates the role of capabilities without reference to strategy:

> Healthy growth is ... the outcome of growing demand for special capabilities or extended capabilities. It is the outcome of a firm having superior products and skills. It is the reward for successful innovation, cleverness, efficiency, and creativity ... It normally shows up as a gain in market share that is simultaneous with a superior rate of profit. (Rumelt, 2011, p.159)

He might just as well have said that superior profits flow from the exercise of strong dynamic capabilities, which help a firm to unleash its creativity and innovation.

A strategy cannot be deemed good or bad without reference to capabilities. A hollow kernel has no substance. Relevant capabilities must be linked to the strategy and orchestrated with it. I made this point back in 1984 by noting that "the whole concept of strategy involves matching the firm's capabilities to its environment, so that in the absence of an adequate theory of the firm's capabilities, one is absent an adequate theory for addressing important issues in strategy formulation" (Teece, 1984, p.105). Accordingly, "it is most important that the analysis of strategic positioning… be balanced with concern for the building of distinctive competences, and with strategy implementation and execution" (ibid., p.107).

Capabilities are clearly implicit in many of Rumelt's strategy narratives and in the work of his students (e.g., Hoopes and Madsen, 2008). For example, one of his examples is the biblical story of David and Goliath, which underscores the importance of capabilities: David discards the armor he had been given because he recognizes that one of his differentiating capabilities is his speed. And the main point of the story is how he harnessed his skill with a sling to a strategy attacking Goliath's unprotected forehead. Goliath had capability, too: he was big and strong, and his strategy of smashing his young opponent was feasible. If David had missed his mark, Goliath might well have won.

Sometimes (ordinary) capabilities can be overwhelming, even if strategy is only mediocre. As Admiral Bill McRaven put it,[8] in any navy, the quantity of ships (i.e., resources/capability) can have a quality all its own. More generally, it is often argued that sheer force of numbers will often prevail on the battlefield. This statement is tantamount to saying that better strategy won't necessarily produce a win if resources/capabilities on the other side are overwhelming.

But it is also the case that resource accumulation not informed by strategy can be useless. This accords with Frank Hoffman's (2004) analysis of the British Navy's inability in 1916 to win the Battle of Jutland. Despite the British Navy's numerical advantage, the battle was a stalemate.[9] British Vice-Admiral Sir David Beatty, expressing surprise that superior British naval resources did not prevail, proclaimed at the time that "there seems to be something wrong with our bloody ships today." Hoffman, reviewing the situation nearly a century later, concluded: "It was not the bloody ships that were principally at fault. It was the inadequate doctrine of command and control" (2004, p.70). Put differently, the British failure to leverage their superior surface-ship numbers (resources) into a victory reflected a failure of (military) strategy.

In my own work, I have attempted to distinguish between capabilities, which are organizationally embedded and path-dependent, and strategy, which is more context-dependent and transitory (e.g., Teece, 2014). Moreover, Rumelt's strategy kernel is a sequential process applied to one problem at a time, whereas the elements of dynamic capabilities (sensing, seizing, and transforming) are ongoing processes and are not confined to a single business or technology.

Nevertheless, there is significant parallelism between how dynamic capabilities are exercised and Rumelt's three-part strategy schema. Table 2 maps the kernel to dynamic capabilities. Sensing contains a strong element of diagnosis.[10] Seizing needs to be connected to both a guiding policy and coherent action. Transforming an organization to enhance value creation and capture also depends on a guiding policy and plan of action to enable aligning with strategy. Some outputs of the exercise of dynamic capabilities, such as business model design or shaping the business environment, share the characteristics of strategy.

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[8] Conversation with the author, July 14, 2020.

[9] The British (aided by the Australians and Canadians) had 151 combat ships, including twenty-eight battleships. The Germans had ninety-nine combat ships, including sixteen battleships.

[10] The terminology can also overlap. For example, Rumelt notes that a strategist "senses ... imbalances in pent-up demand that has yet to be fulfilled" (Rumelt, 2011, p.102).

TABLE 2: The Strategy-Dynamic Capabilities Nexus

Strategy Kernel (sequential)	**Diagnosis**	**Guiding Policy**	**Coherent Action**
Related Dynamic Capabilities Clusters (simultaneous)	Sensing & Sensemaking	Seizing & Transformation	Seizing & Transformation
Primary Managerial Style Required	Entrepreneurial	Administrative	Leadership

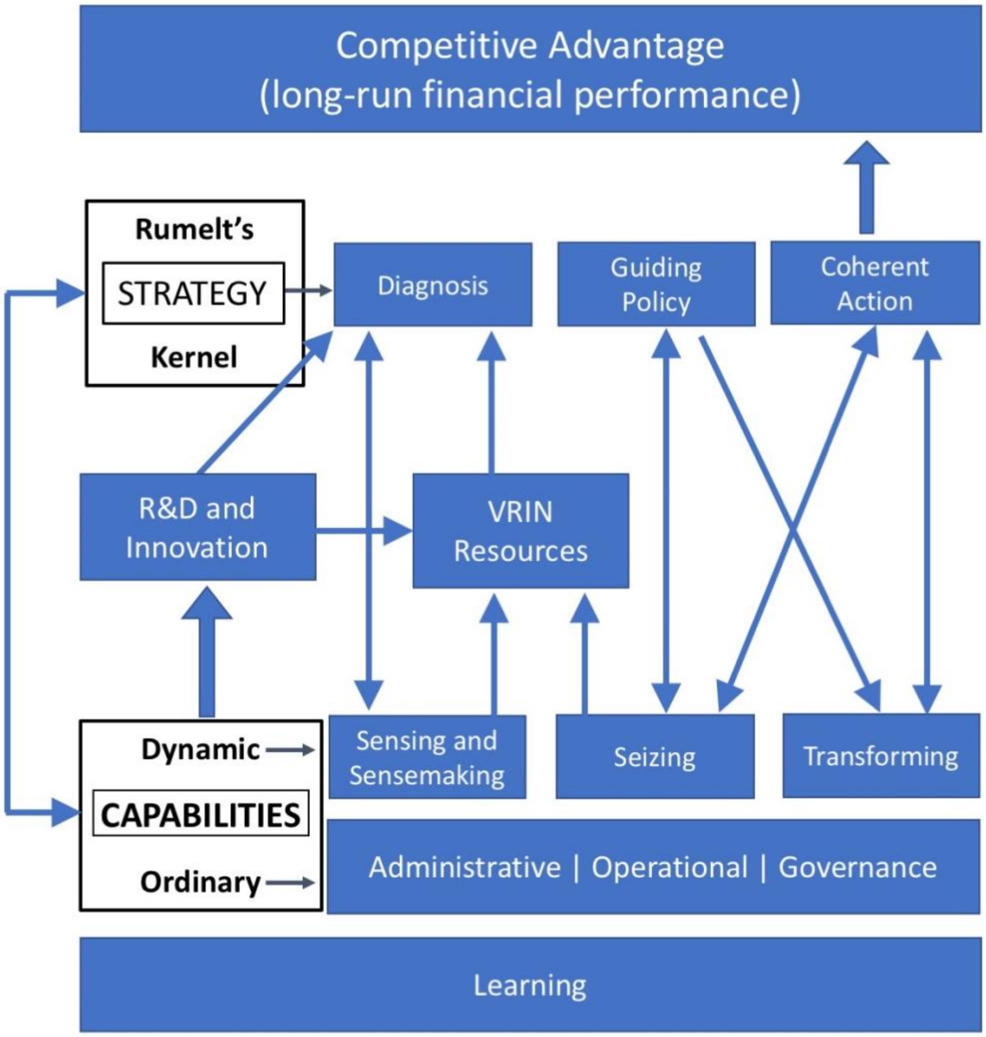
Examples of this can be seen in the Battle of Trafalgar in 1805, which Rumelt uses on the first page of *Good Strategy*. Trafalgar was a naval engagement fought off the coast of Spain by the British Royal Navy against the combined French and Spanish fleets during the Napoleonic Wars. Rumelt followed in the path of historians, who credit Admiral Lord Nelson's innovative strategy: engaging the enemy fleet by dividing his smaller force into two columns directed perpendicular to the larger enemy fleet – a complete break from prevailing tactical orthodoxy (which was to engage parallel, in a single line). His ability to execute this at sea is an example of the asset orchestration reflective of strong dynamic capabilities.

Less frequently mentioned when the battle is recalled is that Nelson hoped to isolate the enemy's flagship to limit its ability to coordinate its fleet. In the ensuing chaos, there would necessarily be ship-to-ship actions, in which Admiral Nelson's more agile ships and crews would have a better chance than in an orthodox line-versus-line engagement. Lord Nelson knew that the better seamanship and faster reloading speeds of the Royal Navy gunners would play a key role. Nelson's strategy leveraged the more agile capability of his naval force, which had been built up and trained (transformed, in dynamic capabilities terms) before the battle took place. Meanwhile, the years-long British blockade of the continent (the result of seizing, in dynamic capabilities terms) had kept the French fleet under-provisioned and lacking in fighting experience. The long-term exercise of strong dynamic capabilities by the Royal Navy enabled Nelson's brilliant strategy to succeed in the decisive battle despite a smaller number of ships.

To summarize, strong dynamic capabilities match organizational resources, including agility and resilience, to strategy. General Charles de Gaulle is reported to have said that strategy without agility is for naught.[11] Figure 1 is an endeavor to tie these various ideas together schematically.

[11] If it was not de Gaulle, it was certainly Lou Gerstner. As he was about to take charge of a troubled IBM, he told Fortune that "you have to be fast on your feet and adaptive or else a strategy is useless" (cited in Sellers and Kirkpatrick, 1993).

FIGURE 1: A Systems Perspective: Rumelt's Strategy Kernel Embedded in the Dynamic Capabilities Framework



V. RUMELT AND THE STRATEGIC THEORY OF THE FIRM

The field of strategic management's primary goal is to improve practice, and Rumelt has made exceptional contributions in that regard. However, particularly in the last 30 years, theory has not been ignored. The field has tried to develop the science of strategic management in the form of a theory of the firm.

This theory addresses fundamental issues such as why firms exist, why they differ, and how their boundaries are drawn. A critical, yet often neglected, issue is the source of competitive advantage, i.e., explaining the source of superior and durable performance. This involves the growth of the firm and, by extension, the growth of national economies. It would thus seem of central importance to economists; yet they rely for the most part on models that attribute growth to the use of generic labor, capital, and technology in the production activities of a set of unrealistic "representative firms." It is critical to begin by correctly identifying the nature of the firm in order to build a theory of the firm that can be a useful construct to aid both managerial and policy decisions.

Strategic management uses concepts such as resources and capabilities to explain firm differences and performance outcomes. The VRIN framework, which identifies assets that are valuable, rare, imperfectly imitable, and non-substitutable as the source of advantage, sits at the heart of the resource-based view of the firm and tries to explain long-term advantage (Barney, 1991). However, it is static and doesn't explain where the "V" in VRIN comes from or what becomes of it should the context change. These are questions that an exploration of strategy dynamics can allow us to answer.

The concept of capabilities, which, as explained above, is very compatible with strategy dynamics, is more useful than resources for thinking about advantage because it encompasses both knowledge and learning. Moreover, the existence of dynamic capabilities alongside or above the firm's ordinary capabilities makes clear that resources must be coordinated and, over time, either augmented or winnowed in order to support competitive advantage.

Existing economic theory of the firm doesn't provide much help. The simplistic model of homogeneous firms used in neoclassical economics can generate growth by adjusting the coefficients on a few variables such as investment. However, the underlying assumption is that all firms respond to the same set of prices and possess the same technologies and production possibilities. This is driven by the conceit that markets (and the price system) are perfectly suited to coordinating almost all economic activity and that an individual firm's history and capabilities don't matter. Managers, much less entrepreneurs, have no role to play.

Nobel laureate Herbert Simon (1991) found the neoclassical formulation of the problem (i.e., in the beginning there were markets) somewhat farcical and noted that someone looking from Mars at Earth would no doubt notice organizations (and business firms) before they noticed markets.

The problem with these approaches, as Rumelt and others in the field of strategic management see it, is that they implicitly assume that opportunities for economic gain other than through doing things more efficiently are exhausted. This flows from the static analysis employed and the use of an equilibrium framework (Teece, 1984). There is no room in their models for the entrepreneur or the entrepreneurial manager to create disruptive new rent streams or build differentiated structures (Teece, 2016).

The neoclassical theory of the firm has improved (and been partially displaced) because of transaction costs economics (Coase, 1937; Williamson, 1975) and property rights frameworks (Hart and Moore, 1990; Barzel, 1989). These theories address the issues of the existence of firms and the delimitation of their boundaries. However, as explained below, these improved formulations are unable to account for firm heterogeneity because, in keeping with practice in the economics field, they assumed away differences in "production costs" and other attributes that can influence firm boundaries. These approaches implicitly adopt the notion of representative firms, differing only with respect to a few variables such as ownership of specific assets. This stream of work has nevertheless yielded three (and, arguably, four) Nobel laureates: Ronald Coase, Oliver Williamson, and Oliver Hart (and possibly Herbert Simon).

Williamson was the only one of these Nobelists to engage with strategic management scholars, arguing that economizing on governance (transactions) and other costs is the best strategy because "strategizing is relevant principally to firms that possess market power—which are a small fraction of the total" (Williamson, 1991, p.75). In his view, market power was fleeting, and, in its absence, there were few issues for (strategic) managers to address. In contrast, the field of strategic management sees the performance of the business enterprise as very much impacted by management's ability to make quality decisions and create a defensible competitive advantage that can afford shelter from the drift towards perfect competition and the associated zero-profit trap. Rumelt's appeal to strategy dynamics reflects an appetite for a theory that helps explain how advantage can last. Achieving such a goal in a world of uncertainty requires continuously creating new advantages to replace or augment the old.

In 1984 if not sooner, Rumelt began toying with these issues. He was perhaps the first strategy scholar to put a stake in this ground when he set out to "suggest the outlines of a 'strategic' theory of the firm" (Rumelt, 1984, p.557). I would prefer to call it a strategic management theory of the firm to make completely clear that the manager plays a critical role in the theory, whereas both the manager and the entrepreneur are completely absent in almost all economic theories of the firm.[12]

In his 1984 article, Rumelt invoked Schumpeter (1934) and Nelson and Winter (1974) to lay entrepreneurship and resource heterogeneity (resulting from entrepreneurial activity) as the foundation stones of his theory, which he develops along two avenues.

His first purpose was to build a simple model of competitive advantage. To his assumption of resource heterogeneity, he adds causal ambiguity, which prevents imitation. He then uses this as the basis for a mathematical model showing that this can be sufficient for firms with the best resources to maintain a competitive advantage over rivals. To make the model dynamic, he later notes that successful firms will seek to leverage their "special competences" to enter new, related markets while, at the same time, these firms are at risk from a shift in the "basis for success" in the market (Rumelt, 1984, p.566).

This is a good start down the path I will pursue in the next section, but it leaves key questions hanging. What capabilities are required for successful diversification and growth? How do high-performing firms avoid being victims of shifts in technologies and (consumer) tastes?

His second purpose is to establish a criterion for the boundaries of a firm. He introduces the idea of "dependent post entry efficiencies" (ibid., p.565) as the condition determining whether a particular activity should be internalized. He doesn't unpack the idea of efficiency, which merits further exploration; nor does he impose any environmental condition as to the availability of the asset or activity at competitive prices.

I observed above that Rumelt's writing has often been very close to the dynamic capabilities view, and this is particularly apparent in the 1984 article. In what follows, I endeavor to add a bit more granularity to this idea and to extend this stream of research. There is a great tendency to proliferate new theories, rather than integrate existing ones. Without apology, I try to show that

[12] In Teece (1984), I expressed hope that the "economic theory of the firm and of markets is to the point where, if correctly applied, it can have a constructive impact on the field of strategic management" (p.107). My hope was forlorn, and I now believe that it is up to the field of strategic management to build a "strategic" theory of the firm. Starting in the 1990s, a number of strategy scholars and institutional economists began propounding alternative theories of the firm that addressed this glaring lacuna. These were based on a variety of different foundations, including knowledge (e.g., Kogut and Zander, 1992; Conner and Prahalad, 1996; Grant, 1996), entrepreneurship (e.g., Cox, 1996; Casson, 2005; Alvarez and Barney, 2007b), and competences/capabilities (e.g., Foss, 1993; Pierce, Boerner, and Teece, 2004).

not just the Rumelt perspective, but quite a number of others, fit comfortably in a dynamic capabilities framework.

However, before doing so, I pause to note that it is rather remarkable and quite disappointing that some kind of strategic theory of the firm has been so slow in coming from either economics or the field of strategic management. Its absence in the economics literature can be understood if one recognizes that, despite the work of Coase, Alchian, Winter, and others, the pursuit of what Berkeley Nobel laureate George Akerlof (2020) calls “hardness” has gotten in the way of the task. Akerlof puts it this way:

> The researcher values both hardness and importance; but the weight he places on Hardness leads him to trade off hardness and importance in a socially non-optimal way. In this sense, he is biased. (Akerlof 2020, p.406)

By hardness, Akerlof is referring to the ability to be precise and have tight logic about a topic, especially through the medium of a formal (mathematical) model. Academic economists typically demonstrate this bias as they seek to show that their discipline is more scientific than other social sciences. This bias also impacts how professional awards are bestowed, which economics professors are promoted, and which journal articles are published.[13]

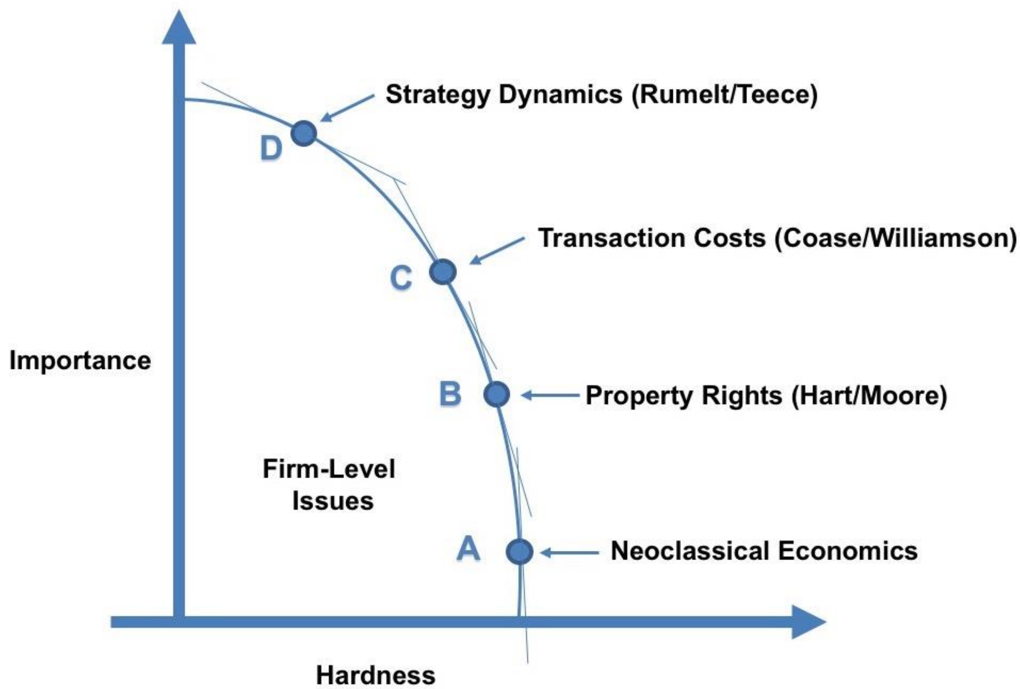
Strategic management scholars don’t have quite the same bias; they are challenged somewhat differently. Perhaps it is an inability to escape from case study narratives? Rumelt sits in the middle, almost alone.

Scholars of innovation and management rarely build formal models to capture the issues they write about. Innovation scholars, for example are analyzing systems many times more complex than what any economic theorist has ever dared to model.[14] The problems they analyze don’t lend themselves to hardness.

Figure 2 is an effort to apply Akerlof’s hardness-importance trade-off to a range of approaches to the theory of the firm.

[13] Augier and March (2008) similarly discuss the dynamic capabilities framework as potentially combining both relevance and rigor in the management field.
[14] Simulation models are, however, common. (e.g., Nelson and Winter, 1982)

Figure 2: Tradeoffs Made by Theories of the Firm



Note: Figure 2 based on Akerlof (2020)

The vast amount of intellectual resources in the field of economics are consumed by research and inquiry around points A and B, which have low importance to society but which bring acclaim and even financial rewards to scholars. It's very hard to win a Nobel prize in economics by focusing on point D on the hardness/importance frontier. Chances are much better by focusing on the neighborhood from point A to point C, and A is a more confident place than C.

Because strategy dynamics is almost impossible to model, it is accordingly ignored by economists in the competition for professional acclaim. To do otherwise would put them too low on the measuring stick of "hardness." However, hardness has to be abandoned if one is to attempt to model innovation, management, and entrepreneurship. That leaves what Nelson and Winter (1982) called "appreciative theory" (i.e., qualitative, observation-based), which can then operate in a sort of dialectic with "hard" theory. Akerlof (2020) echoed this view, noting that an emphasis on hard theory

> involves rejecting softer tests of theories, such as those that evaluate models based on the quality of their *assumptions* as well as the quality of their *conclusions*. It especially entails exclusion of evidence from case studies, whose detailed evidence can be highly informative. (p.408)

This last point limits the ability of scholars from the field of strategic management to engage in meaningful exchanges with economists because case studies are such an important part of research in the field of strategy. The current competition policy debate over "Big Tech," for example, is mired in the economic and legal models of the past. While strategic management scholars could contribute much, the lack of any "hard" model limits their impact on policy.

While Rumelt hasn't quite positioned strategy dynamics as a theory of the firm, his focus is clearly on the ability to create long-term (durable) competitive advantage against a backdrop of change. A robust strategy dynamics theory of the firm would explain not only what Coase (1937) called the "nature of the firm," including why firms exist and how their boundaries are chosen, but also why certain firms perform better than their peers. Crafting such a theory is clearly a heavy lift, or it most likely would already have been done.

VI. THEORIES OF THE FIRM

When constructing a theory of the firm, the constellation of assumptions that strategic management scholars embrace is more realistic than what economists typically adopt (Teece, 1984).[15] This makes it difficult to generate a parsimonious and elegant theory of the business enterprise. However, the additional realism is worth it as it steers one closer to what management teams actually face. In standard economic theory, firms are assumed to be homogeneous. As a consequence, cost minimization and quality differentiation are the only paths to profit. Experience shows that an organization hell-bent on cost cutting is unlikely by that act alone to find the pathway to competitive advantage and greatness. Rather, innovation and entrepreneurship are keys to durable advantages in real markets; and they must be center stage in the theory, too. (Teece, 2010).

To animate a strategy dynamics theory of the firm, we need to start with entrepreneurship. Rumelt (1984, Table 1) identified a variety of "unexpected changes" (reflecting Knightian uncertainty) that create opportunities to secure market positions, which can then be protected by isolating mechanisms. These are changes in technology (including internal innovation), changes in relative prices or consumer demand, and changes in regulation. He treats these as largely exogenous events, consistent with the theory that entrepreneurs discover imperfections in the market that they can then exploit (Kirzner, 1973).

An alternative view, one which is central to the dynamic capabilities framework, is that entrepreneurs create new opportunities through experimentation with combinations of ideas, assets, or other resources (Alvarez and Barney, 2007a). When one firm develops a technology, reveals a previously latent consumer demand, or secures a change in regulation through lobbying activity, the result, if successful enough, delivers the exogenous change to which other managers/entrepreneurs must respond.

A number of scholars have used concepts such as these to produce an "entrepreneurial theory of the firm" that addresses aspects of the firm – its nature, its boundaries, its organization (see, e.g., Cox 1996; Foss and Klein, 2005; Langlois, 2007). Foss and Klein (2005) argue that the essence of entrepreneurship with respect to the theory of the firm, is "judgmental decision-making under conditions of uncertainty" (p.8). The reasons for this link back to the notions of Frank Knight:

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[15] Rumelt's list of elements that were absent from neoclassical models of the firm was "(1) transaction costs, (2) limits on rationality, (3) technological uncertainty, (4) constraints on factor mobility, (5) limits on information availability, (6) markets in which price conveys quality information, (7) consumer or producer learning, and {8) dishonest and / or foolish behavior" (Rumelt, 1984, p.559). Additions from my own list include that markets are generally not in equilibrium and are often not contestable due to the irreversibility of investments (Teece, 1984).

> The only "risk" which leads to a profit is a unique uncertainty ... which in its very nature cannot be insured nor capitalized nor salaried. Profit arises out of the inherent, absolute unpredictability of things, out of the sheer brute fact that the results of human activity cannot be anticipated and then only in so far as even a probability calculation in regard to them is impossible and meaningless. (Knight, 1921, pp.310-311)

In other words, profits are realized when firms make investments under uncertainty. The ability to invest well cannot be acquired in the market. Because there is no equilibrium price at which a non-entrepreneurial owner of the required resources could contract for the entrepreneur's services, the only way for the entrepreneur to engage in the market is to control the resources directly. This is, in short, a theory of the existence of the firm: atomistic economic agents are not viable because of thin or non-existent markets for certain types of transactions. (Teece, 2010).

Another entrepreneurial argument for the existence of the firm dates back to at least the work of economist Ludwig Lachmann, who emphasized the centrality of discovering valuable new combinations:

> *Complementarity* is of the essence of capital use.... and only a few of (the technically possible combinations) are economically significant. It is among the latter that the entrepreneur has to find the 'optimum combination'.... It is in no way 'given' to the entrepreneur who, on the contrary, as a rule has to spend a good deal of time and effort in finding out what it is. (Lachmann, 1956, p.3)

Furthermore, because of uncertainty, this is not a one-time effort:

> We are living in a world of unexpected change; hence capital combinations ... will be ever changing, will be dissolved and re-formed. In this activity we find the real function of the entrepreneur. (Lachmann, 1956, p.13)

Lachmann's view was that ownership was the only way for entrepreneurs to be free to experiment with possible resource combinations. Given the complexity and interoperability of many of today's products and services, current entrepreneurs are typically orchestrating complements both inside and outside the firm. That leads to the second big question for a theory of the firm, namely how the boundary of the firm is drawn.

As mentioned earlier, Rumelt hypothesized that the boundaries of the firm would be set by an efficiency criterion, which he elaborates as "new activities are added until the point where further additions would not add sufficiently large expected profits" (Rumelt, 1984, p.565). He was thinking of product-level diversification, but this marginal revenue logic can potentially also be applied to organizing a vertical supply chain. Langlois (1992) specifically does so, comparing the costs of internal and external production of inputs, as part of what he calls a capability theory of the firm.

Rumelt and Langlois' criterion runs parallel to that of transaction costs economics, which holds that activities are internalized to the point where the marginal transaction cost of external contracting is equal to the marginal bureaucratic overhead of organizing the equivalent activity in-house (Coase, 1937). Transaction cost and production cost differentials could be combined to provide a make-or-buy comparison that doesn't require ignoring either type of cost.

None of these marginalist approaches, however, require entrepreneurship, in the sense of decision making under uncertainty. In fact, a marginal approach implicitly assumes away true uncertainty because it requires that all the available options can be rank-ordered by expected profitability or transaction cost.

Teece (1986) adopted a more entrepreneurial approach to firm boundaries in terms of the decisions made by the creator of an innovation choosing which of the many complements needed to bring an innovation to market should be organized internally. Building on ideas from transaction cost economics, key factors include the complement's current or anticipated unilateral or bilateral specialization with other activities and its availability (or not) at competitive prices.

Teece (1986) gives particular prominence to the risk from a "bottleneck asset" that is not freely traded at competitive prices. Because it can potentially drain away profits from the rest of the supply chain, serious consideration must be given to internalizing it even when the cost of doing so may not be "efficient" in the short run.

Explicitly entrepreneurial theorists have offered further considerations. For Zander (2007), internalization occurs when there is no convergence of beliefs about the future between the entrepreneur and potential suppliers. This echoes Langlois' (1992) notion of dynamic transaction costs for persuading and teaching external partners. Jacobides and Winter (2007) introduce a different dynamic consideration: the future asset appreciation that might accrue to complements if commercialization is successful. In that case, internalization today might be desirable, subject to cash constraints.[16]

Yet another consideration is the need to coordinate future development of complementary technologies or business models. The entrepreneur may need to acquire, license from, or ally with the owner(s) of relevant complements in order to ensure a predictable path for an innovation's future development (Chesbrough and Teece, 1996).

As the above makes clear, an entrepreneurial theory of the firm can readily provide rationales for the nature and boundary of the firm. However, a purely entrepreneurial perspective doesn't easily explain firm performance, because it ignores the resources that entrepreneurs have to work with, particularly the path-dependent organizational capabilities that define their choice set at any moment in time.

An alternative is capabilities theory (sometimes called "competence" or "resource" theory). These theories of the firm are typically based on the economics of knowledge and knowledge transfer (e.g., Teece, 1980, 1982; Langlois and Foss, 1999; Metcalfe and James, 2000). This approach can provide arguments for the nature and boundaries of the firm without reference to entrepreneurs (e.g., Conner and Prahalad, 1996).

Some capabilities scholars have already examined the relationship between capabilities and competitive advantage as part of their development of a theory of the firm. Foss (1993), for example, wrote that "[t]he competence perspective... implies a ... proactive view of the firm, placing learning, innovation and the pursuit of sustained competitive advantage center stage" (p.142). For Langlois (2007), "The essence of the firm, and its source of advantage over spontaneous product markets, lies in its flexibility in circumstances of change and uncertainty" (p.1111). And it should be remembered that the title of one of the founding texts of the capabilities approach was "A Theory of the *Growth* of the Firm" (Penrose, 1959, emphasis

[16] This is similar to Hirshleifer (1971).

added); “growth” at least suggesting an advantage that could be sustained in the face of changes in the business environment.

I see the entrepreneurial and capabilities approaches as complementary. Neither one of them is sufficient by itself, *stricto sensu*, to account for competitive advantage. The acquisition of resources and the development of capabilities by the firm must be guided by the strategic intent of an entrepreneurial management team if they are to result in profitable activity. This complementarity is evident in my earlier efforts on the theory of the firm (e.g., Teece, 2017). Other scholars (e.g., Casson, 2005; Sautet, 2000) have similarly extended an entrepreneurial theory of the firm to account for firm growth and survival by invoking capabilities or resources. There are thus multiple paths to the same goal. In what follows, I will rely on my own capabilities-centric approach, the dynamic capabilities framework (Teece, 2007, 2014).

In the preceding paragraph, I argued for “strategic intent” as the missing element of a theory of competitive advantage. The introduction of strategy takes us beyond the realm of the purely entrepreneurial. The entrepreneur, who identifies future opportunities and engages in creative leaps to seize them, may not be a strategist, who can help keep the enterprise competitive on an ongoing basis. Rumelt defined strategy as “the art of creating or exploiting those advantages that are most telling, enduring, and most difficult to duplicate” (Rumelt, 1980). It is to the strategist that I now turn.

VII. A STRATEGY DYNAMICS THEORY OF THE FIRM

In the McKinsey interview quoted earlier, Rumelt described strategy dynamics as the ability to look far ahead and develop insights about how firm strategy should be adjusted. In both practical and theoretical firms, this implies the availability of dynamic capabilities, which are forward-looking and which provide the basis for strategy formulation and the organizational flexibility for implementation.

In order to build a theory of the firm that truly encompasses the competitive advantage of individual firms, a more elaborate model is required than the parsimonious view of the firm in either the entrepreneurial or competencies theories. In order for a firm to succeed over the long term, the vision of the entrepreneur, the strategy of top management, and the capabilities of the organization must be enacted on a daily basis. The result here may be over-determined, but I will leave the reduction to essential factors to myself or others in the future.

In the dynamic capabilities framework, the bulk of what firms do is considered part of its ordinary capabilities. As the name implies, ordinary capabilities are generally also available to competitors through acquisition, benchmarking, consultants, and so on. Orchestrating the firm’s ordinary activities require dynamic capabilities, which I divide into sensing/sensemaking, seizing, and transforming (Teece, 2007).

To some extent, dynamic capabilities are embedded in the organization’s staff and routines. But dynamic capabilities are also dependent in large degree on the firm’s managers (Teece, 2012). The managers must collectively embody three different types of skills, namely, entrepreneurial, managerial, and leadership (Teece, 2016).

Entrepreneurs create value by assembling particular constellations of complementary and cospecialized assets, especially knowledge assets, to produce innovative and differentiated goods and services that customers will want. The ongoing process of identifying, assembling, and orchestrating assets is a fundamental function of entrepreneurial management.

Managers, especially middle managers, are vital for translating the strategic vision of top management to the rest of the organization, overseeing the firm's ordinary capabilities, and enabling a culture of innovation and creativity within the appropriate limits (Lee and Teece, 2013). This requires a light touch, particularly with the firm's expert talent: its literati and numerati (Teece, 2011a).

Leaders are needed because constant orchestration implies frequent change. A strategy formulated by the top management team is little more than a map on the wall until the organization as a whole takes it up. Compelling leadership is needed to overcome the innate inertia of many workers and work groups (del Val and Fuentes, 2003).

This brings us to strategy, which is formulated by entrepreneurial managers and informed by the firm's dynamic capabilities. Dynamic capabilities help a firm decide what to produce and how and where to make, market, and distribute it. Corporate strategy guides key decisions such as allocation across different product areas, brand development, the timing of market entry, and how to keep competitors at bay. The goal of strategy is to outmaneuver competitors by taking advantage of their mistakes and leveraging in-house strengths.

The symbiotic relationship between dynamic capabilities and strategy was discussed in Section IV, above. Capabilities only achieve their value in the service of a good strategy, and a good strategy must be supported by strong capabilities if it is to be executed effectively.

Dynamic capabilities and strategy operate on different time scales. Barring catastrophic disruption by organizational failure or dismemberment, a firm's dynamic capabilities will generally deepen and evolve over time. Strategy, by contrast, is set only until circumstances force it to be reset:

> In most firms comprehensive strategy evaluation is infrequent and, if it occurs, is normally triggered by a change in leadership or financial performance.... While evaluating strategy on an annual basis might lead to some sorts of efficiencies in data collection and analysis, it would also tend to strongly channel the types of questions asked and inhibit broad-ranging reflection. (Rumelt, 1993, p.8)

In other words, a good strategy "does not need constant reformulation. It is a framework for continuing problem solving, not the problem solving itself." (Rumelt, 1993, p.8)

Rumelt (1993) identifies the potential sources of competitive advantage as "Superior skills," "Superior resources," and "Superior position." Without doing too much mischief to his definitions for these, I would re-categorize them as (1) the ordinary and dynamic organizational capabilities built up by the firm over time, (2) the other key assets built and acquired to complete the vision of entrepreneurial managers, and (3) the positions gained through entrepreneurial agility and maintained through good strategy.

With the entrepreneurial, capabilities, and strategy dynamics approaches employed together in something like the dynamic capabilities framework, we can begin to see a far more recognizable image of the firm: one that is constantly seeking opportunities and defending against threats; one that is able to respond to unexpected events and strategize with regard to rivals.

The strategic dynamics/dynamic capabilities framework fills in the gaps between the existence of an opportunity and the eventual defense of a new business. The opportunity must first be sensed (and/or created). It must be seized through the elaboration of a business model. Then the organization must be transformed as the business requires, at which point Rumelt's isolating mechanisms come into play.

The focus of Rumelt's (1984) model—as in most of his work—was the strategy required to protect and capture value. This ignored the reality that any successful enterprise must first support purposeful combinatorial and collaborative activity, internally and externally, to create value. In the dynamic capabilities framework, sensing and sensemaking (including R&D and the associated development of new products, services, and business models) leads to this asset orchestration, i.e., the ability of top management to ensure ecosystem-wide coordination and strategic alignment. In short, competitive advantage must be built before there is value to be captured and safeguarded. Rumelt is a bit light on this "front-end" activity.

I conclude with four propositions that together constitute a firm-centric strategy dynamics framework, combining capabilities and strategy concepts in a way that Rumelt would most likely recognize:

1. Firms exist to create and capture value by developing and deploying managers who can drive organizations to high proficiency in sensing, seizing, and transforming. Autonomous market agents bound by contracts cannot do this. Innovation occurs not by markets alone but because of entrepreneurial managers detecting customer needs and developing new combinations to satisfy them. Markets assist by facilitating exchange. Markets and managerial-led organizations are complements, not just substitutes (as the Coase-Williamson paradigm implies).

2. The boundaries of the firm are not set just to minimize transaction costs. They are set to facilitate learning and to capture scope economies, thereby allowing capabilities to grow, orchestration and repurposing of assets to augment value (Lovallo et al., 2020), and strategizing to better aid the firm's capacity to capture value.

3. Entrepreneurial rents are made possible by the presence of uncertainty and by exploration and discovery. Different organizations, even if identical, will assess their opportunity set differently. Some products and services will better satisfy market demand, building positions that can be protected by uncertain imitability and other isolating mechanisms (i.e., strategies).

4. Firms differ because managers embody unique individual characteristics. They construct distinct organizations that evolve in idiosyncratic ways. Key intangibles, such as capabilities, must be built and cannot then readily be bought in the marketplace by rivals (without buying and separately maintaining the entire organization).

VIII. CONCLUSION

There is nothing in this paper that Richard Rumelt hasn't read before, hasn't thought about before, and hasn't talked about before. He is *the* thought leader in the field—strategy's strategist. But unless the large stock of knowledge that the field of strategic management has accumulated can be brought together in an organized way, the field will not continue to advance.

I have proposed the dynamic capabilities framework for this purpose. It was designed as a cross-disciplinary portmanteau of earlier theories (Teece, Pisano, and Shuen, 1997; Teece, 2011b). In addition to Rumelt, the intellectual forebears of dynamic capabilities include economists and business scholars like Jay Barney, Alfred Chandler, Giovanni Dosi, Nicolai Foss, Constance Helfat, Israel Kirzner, Richard Nelson, Edith Penrose, Nathan Rosenberg, Joseph Schumpeter, Oliver Williamson, and Sidney Winter. The framework also incorporates strategy-related concepts like Abernathy and Utterback's innovation life cycles, Cohen and Levinthal's absorptive capacity, Christensen's disruption, Tushman and O'Reilly's organizational ambidexterity, and many more. A capacious, unified framework can help students, scholars, and practitioners to understand how everything from business basics to grand ideas fit into a larger picture. There does not appear to be any other framework on offer that attempts to do so.

Dynamic capabilities can be seen as a workable systems framework that can help the field of strategic management find its distinctive role. Its focus on business organizations and markets provides the logic that guides the understanding of how the business enterprise creates and captures value. Good strategy is a necessary condition for capturing value and, ultimately, for enterprise viability.

This tribute is designed to do double duty: to recognize Richard Rumelt for his fundamental contributions, but also to weave his work together with mine and that of others into what he himself once aspired to create: a "strategic theory of the firm" (Rumelt, 1984, 1995). Should the field, currently fragmented among endless siloes and fiefdoms, be able to settle on such a theory, Rumelt's immortality is assured.

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