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**Schumpeterian
Competition and
Dynamic Capabilities:
Towards a theory of
the 'Schumpeterian
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Schumpeterian Competition and Dynamic Capabilities: Towards a theory of the ‘Schumpeterian Corporation’

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1. Introduction

The field of Strategic Management is in turmoil. The simultaneous rise of huge “big tech corporations” and of the “Middle Kingdom” raised key questions for the field’s future. David Teece, the prominent scholar in the Dynamic Capabilities perspective on Strategic Management, recently echoed these concerns. In his article for the inaugural issue of the Strategic Management Review, Teece (2020a) expands a fundamental discussion of key issues in strategy, in a debate whose roots are in Rumelt, Schendel and Teece (1991/1994). After offering a quick overview of the different circumstances that have emerged during the last quarter of a century, Teece points to the disruptive consequences of the emergence of the People's Republic of China as a contemporary economic powerhouse, and the implications for strategic management in the “west”, of an alternative, and very successful way of organizing economic activities.

In fact, the “China model” has produced and sustained several globally competitive corporations, a fact that brings consequences for the entire field of Strategic Management, particularly in what concerns the active role of the State in creating and shaping an institutional environment supportive of the country's economic development in conjunction with business and innovation strategies of private, 'semi-state-governed' and state-owned firms.

For the Strategic Management discipline, basic assumptions, research programs, and connections with other disciplinary areas – everything must be on the agenda. Teece concludes: “The field of Strategic Management is itself at an inflection point. If it is to have continuing relevance, it must go through (intellectual) disruptions of the kind that business itself confronts. Small incremental steps will not get the field to where it needs to be” (2020a:33).

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In this context, Teece calls on the field to debate its theoretical and conceptual foundations, key assumptions, received theories, key narratives, and research findings. In this 'call for arms', he is emphatic about how imperative it is for this engagement to take place, because, and we think he does not exaggerate, the fate of peoples and nations is at stake.

This manuscript seeks, within its inevitable space and scope limits, to engage in responding to his call. The essay presented here is born out of an interdisciplinary dialogue between an evolutionary economist who radicalized his conceptual framework of reference through an in-depth reading of J. Schumpeter's works, and especially his propositions in *Capitalism, Socialism and Democracy (CSD)* (Schumpeter, 1942), which led him to deepen the Schumpeter's own original approach and integrate it with the macroeconomic and financial propositions coming from John Maynard Keynes and Hyman Minsky; and a production engineer who evolved from his studies on *Technology and Operations Strategy* in the 1990s towards the perspectives of the *Strategic Management of Innovation*, a trajectory that he followed taking the *Dynamic Capabilities framework* – “DC framework” – as a key reference throughout all his works in research, development, and innovation.

It should be recognized that these two strands of research have convergent analytical contours, as well as key reference points that allow them to be combined. The inspiration for this essay was shaped by a footnote, and an observation by Burlamaqui, on the need for an integrated theory of competition and the corporation (Burlamaqui, 2019:24, ftn6), where he refers to the DC framework as “the most promising effort in progress”. This paper seeks to analyze the extent to which the evolution of this perspective along its “Teecian” trajectory has brought us to a convergent path on how it could be aligned with what Burlamaqui has named “the creative destruction paradigm”.

Let us establish right away what we are *not* going to tackle. This is not another input for the “endless debate” about the internal coherence of the *Dynamic Capabilities* approach (Peteraf et al, 2013; Schilke et al., 2018). The axis on which this text stands is the development of conceptual propositions for a research program geared at establishing an understanding of capitalism as an evolutionary system, founded on Schumpeterian competition, and one which incorporates, as one of its key building blocks, a theoretically rekindled “dynamic capabilities approach”.

Our “normative” goal is to extract the implications of that new synthesis for the strategic management of contemporary corporations and for public policy. If successful, this perspective can improve the way managers and policy makers analyze the “business landscape” and craft their key strategic decisions. In line with the issues raised by Teece (2020a), the propositions derived from such 'new paradigm' go well beyond the relations between competition and firms (Burlamaqui, 2019, 2022).

We will not discuss political economy issues, institutional constellations, the organization of the financial system, or social and economic outcomes springing from our propositions. From a Management

Engineering point of view, we will also not delve into issues relating to advanced design propositions in Strategic Management³.

The aim here is to contribute to the development of a much-needed and integrated Schumpeterian ‘theory of competition and of the corporation’. We will build on the latest propositions by Teece (2014b, 2016a, 2017, 2019), advancing adjustments and additions that fit in the context of what we understand as Schumpeter’s “creative destruction paradigm”.

We try to build a theoretical skeleton that begins with the key propositions of the “creative destruction paradigm”, as interpreted by Burlamaqui (section 2). Section 3 seeks to understand innovation and competition within the scope of the paradigm, aiming to go beyond the traditional readings of Schumpeter's work, which fail to properly integrate innovation and competition. Section 4 proceeds to engage with the contemporary discussion of the concept of Dynamic Capabilities, especially, as presented and developed by David Teece, its main formulator. Section 5 submits some propositions on how the DC framework should be rekindled to become fully coherent with the creative destruction paradigm.

We conclude by establishing key topics of the research agenda to be pursued. Two big challenges stand out. The first refers to the absence of the financial dimension in the build-up, and subsequent evolution, of the Dynamic Capabilities approach. The second relates to the, key, role of the State in co-creating Dynamic Capabilities to enhance corporate performance. We close the paper by providing some initial thoughts on the nature and workings of the “China model”, focusing on the Chinese Entrepreneurial State and its role in the evolution of China’s globally successful corporations.

2. The Creative Destruction paradigm

In his recent work, Burlamaqui (2019a, 2022) demonstrated that, in his book 'Capitalism, Socialism and Democracy' (CSD) (Schumpeter, 1942), J. Schumpeter made a radical departure from his previous analytical framework, the one he used in both “Theory of Economic Development” (TED) (Schumpeter, 1912) and in “Business Cycles” (BC) book (Schumpeter, 1939), this one published only three years before CSD. Burlamaqui claims that CSD offered a new paradigm away from both cycles and equilibrium. Noting that Schumpeter himself did not follow on this "radical departure", Burlamaqui's contention, however, is that in CSD a new, and “radical Schumpeter” emerged.

³ We take on the challenges of Strategic Management as an area of 'Management Engineering' where, as happens in the Design Sciences, the results of research in Strategic Management (when understood as a Social Science) are appropriated as references for designing the approaches, methods, structure, processes, incentives, and implementation paths of management solutions. On Design Science and Management, see Van Aken (2004, 2005, 2013), Van Aken & Romme (2009), and Van Aken et al. (2007). In fact, the demand for Management to develop a Design Science branch has been made by different thought leaders in the Management area itself; see, for example, Hamel & Birkinshaw (2021), among others.

Based on his own theoretical research work (e.g. Burlamaqui, 2000; Burlamaqui and Kregel, 2005; Burlamaqui et al, 2013; among others) and contributions from several authors (among them N. Rosenberg, W. Lazonick, R. Nelson, E. S. Andersen, M. Best, M. Mazzucato, D. Teece – Burlamaqui, 2019:4, ftn6), Burlamaqui sought precisely to “sever” Schumpeter the “radical evolutionary economist” from the ‘Walrasian Schumpeter’. This was in fact an intellectual project enunciated by N. Rosenberg in Kyoto's 1992 Schumpeter Society conference when he delivered a paper later published with the provocative title “Schumpeter: Radical Economist” (Rosenberg, 1994).

In his paper, Rosenberg begins by stating that CSD was the “mature statement of the most radical scholar in the discipline of economics in the twentieth century” (1994: 41). He went further: “...it is my intention to show the quintessential later Schumpeter...held views that were not only radical but are deserving of far more serious attention than they receive today, even or perhaps, especially from scholars who think of themselves as working within the Schumpeterian tradition” (1994:41). Despite his brilliant remarks, Rosenberg did not carry out the intellectual project he sought.

Burlamaqui picks up where Rosenberg left off and argues that, after seventy-five years of its publication, CSD still is a vastly unexplored work in the sense that it offers a whole new paradigm to analyze the way capitalism works, a paradigm never properly developed by Schumpeter himself, or by Schumpeter-inspired scholars. *Capitalism, Socialism and Democracy* is rightfully praised for the criticisms it directs to the neoclassical model of perfect competition, for its emphasis on the importance of innovation for development, and for its innovative concept of “creative destruction”. What has been largely overlooked, though, is that CSD also provided a whole new framework for economic analysis, a framework where Schumpeter's previous theoretical innovations, in both TDE and BC, concerning the workings of an evolutionary system, fit together.

The widespread adoption of the “general equilibrium axiom” remains at the core of mainstream economics, and one may never explain satisfactorily what accounts for its lasting resilience until today. Somewhat surprisingly even in the Schumpeterian community, the “equilibrium assumption” still holds. A big portion of the Neo-Schumpeterian descendants of Schumpeter chose to stick with equilibrium, while adopting some variations of neoclassical assumptions, but proceeded to develop mathematically oriented research and modeling strategies that largely forgot History⁴. For the admittedly unconventional interpretation of Schumpeter that we propose here, this was a big mistake: it narrowed down Schumpeter's agenda dramatically, instead of developing and expanding its boundaries.

Schumpeter's “radical departure” from his previous theoretical framework was brought to light, and extended, by Burlamaqui. The outcome of this renewed analytical perspective was labeled “The Creative

⁴ Basically, based on Neo-Keynesian models (NK models – Teece, 2021:21). However, as Burlamaqui (2019) was also keen to point out, a few neo-Schumpeterian economists resist the “equilibrium trap”. Among them N. Rosenberg, W. Lazonick, R. Nelson, the “young” G. Dosi, M. Best, E. S. Andersen, M. Mazzucato and others.

Destruction Paradigm". In "desperate brevity", as Schumpeter was fond to say, its building blocks can be summarized by the following propositions:

A: Capitalism is an evolutionary system where change, not equilibrium, is the most important object of inquiry.

In the creative destruction paradigm, the general equilibrium perspective, central to the cycle models proposed by Schumpeter in 1912 and 1939, vanishes and perfect competition is criticized as belonging to the fiction of economics textbooks (1942:114). In his own words, "As a matter of fact, a capitalist economy is not and cannot be stationary. Nor is it merely expanding in a steady manner. It is incessantly being revolutionized from within by new enterprise, i.e., by the intrusion of new commodities or new methods of production or new commercial opportunities into the industrial structure as it exists at any moment... Economic progress, in a capitalist society, means turmoil" (1942: 31-2).

The old "skin" is gone. A new Schumpeter emerges. Capitalism equals *change* which equals *turmoil* which collides with *equilibrium* and whose main agents are corporations (either big or small) who survive and prosper competing, relentlessly, through innovations, differentiation strategies and market-niche creation. At the root of this understanding of economic evolution, two elements emerge as front and center: competition as the engine, and innovations as the fuel.

B: The financial system is key, and its main components, credit and debt, financial innovation and financial fragility are essential components of the system's evolution.

Money and credit are endogenous to the financial system, and credit is the main vehicle through which investments and innovations are made possible. Economic change is understood as an endogenous and irreversible process, which depends on the combination of business activity and the financial system, which implies credit creation, recurrent indebtedness, fluctuations in economic activity, and processes of financial fragilization of economic agents. The main causal chain in the operation of the capitalist system runs from policymakers, bankers, and entrepreneurs' decisions to the determination of investment, the speed of technological change, productivity increases, and employment profiles⁵. Financial fragility springs from the relationship between "technological" (in a broad sense) and financial innovation, indebtedness, and uncertainty.

From this perspective, a huge convergence emerges, to be further explored, between the theoretical propositions made by Schumpeter, Keynes, and Minsky. Burlamaqui begins to advance on that road (2019,

⁵ It seems proper to highlight here that with this chain of players Schumpeter does not 'belittle' the role of managers as we understand 'managing' nowadays, in his analysis of the dynamics of competition, as one may find observed in part of the strategic management literature (e.g., Teece, 2017:702). In fact, he distinguishes the administrative and operational work of 'managers' – clearly more identifiable as foremen and supervisors – from the mission of the 'entrepreneur', which may perfectly be a role performed by a manager, such as we define 'manager' today. This dual role is also found in Penrose's distinction between management "administrative" and "entrepreneurial" functions (Penrose, 1959), and in the writings of Peter Drucker (see, for instance, Drucker, 1974).

2022), a road whose fellow travelers include Mazzucato and Wray, 2019; and Kregel, 2019. This bridging and its implications for an evolutionary perspective on how structural transformation takes place are bound to generate fruitful results. However, to expand on this dimension it is not the object of this paper⁶. Here we are concerned with linking Schumpeterian competition with the dynamic capabilities approach.

C: Competition - understood as rivalry between firms and "selection mechanism" - is the engine of this continuous process of change.

Innovations - or applications of new ideas to the economic sphere - are the main sources of power for this engine. They are the weapons for competition, and therefore the main component of successful business strategies. Innovations and technical progress periodically revolutionize the capitalist economy and simultaneously bring progress and conflict – conflict between the old and the new – configuring a continuous process of creation and destruction: the process of 'creative destruction' In this context, profit rates tend to differentiate, not to equalize.

Therefore, the premise is that economic agents are creative, and corporations are agents of transformation. Technology⁷, by offering an 'unmapped ocean of economic possibilities', is a solid foundation on which companies can build their competitive advantages. The intertwining of competition by means of innovations and corporate entrepreneurship gives us the seeds to build a dynamic theory of the firm. A theory of the "Schumpeterian Corporation".

These propositions clearly converge with what Petit and Teece (2021) called "Dynamic Competition": the situation in which firms compete for future rents. "In dynamic competition, firms use innovation to introduce new products, processes, and services. Rivalry results in product differentiation, recombination, integration, diversification, or 'plataformization'. It is a type of competition animated not by firms that compete head-on with similar products but by heterogeneous competitors, complementors, suppliers, and customers, using innovation to bring forth new products and processes. Such competition improves long-term factor productivity, raises consumer welfare, and supports higher wages." (2021:3).

D: Institutions and policy interventions are intrinsically connected to economic evolution.

Institutions and policy interventions create the conditions ("rules of the game", legal structures, routines, regularities, and mechanisms of regulation, coordination, and support) where the tension between creation and destruction – the essence of economic evolution – can be attenuated, and somehow managed. There is no way to understand the dynamics of competition without placing it within institutional, policymaking, and regulatory frameworks.

⁶ One of us (Burlamaqui) is currently working in this direction, and some of the expected results will appear in Burlamaqui: 2024.

⁷ Technology can be defined as "an exercise of the human imagination aimed at transforming nature for utilitarian purposes, and the result of which is the creation of a second nature, which is superimposed on inherited nature" (cf. Bell:1976). This definition is broad, but precise, and covers product, process, management, etc. technologies.

Therefore, there is, by definition, ample space, in this paradigm, for legal, regulatory, and informal institutions, and for public-private cooperation in the formulation, and implementation, of development strategies, public policies, and institutional adaptations, especially in the areas of industrial, technological, and competition policies, which should have the increase of the productive potential and systemic competitiveness in the economy. as their fundamental goal. Once this is accepted, the pivotal role of the State in shaping evolution becomes crystal-clear.

E: The State plays a key role in economic transformation.

States, more precisely 'Entrepreneurial States', are pillars of successful development processes. The creative destruction paradigm naturally highlights the centrality of state action for the process of economic development and is therefore related to the broad literature that investigates this relationship, whether in post-1978 China, in East Asian countries, or in Germany from the 19th century onwards, or, in the United States, since Alexander Hamilton.

This is an area around the propositions associated with the creative destruction paradigm that was not properly developed either by Schumpeter or in the Schumpeterian/evolutionary research program so far. However, perhaps it is here where the analytical capacity of this new paradigm emerges with distinctive vigor. It allows for the seamless link between the State and economic transformation, a topic on which mainstream economics never made much progress. Within the creative destruction paradigm, state capacity and development strategies go hand in hand, competition and regulation are two faces of the same coin, and breakthrough technologies very often steam from public initiatives. These are all areas that impact competition and corporate strategies and need further analytical advancement.

However, in this paper, as mentioned above, the central concern is not the State in its relation to economic evolution, but the proper linkage between competition, the corporation, and the build-up of corporate strategies from a Dynamic Capabilities perspective. This is where we focus our analysis now.

3. Schumpeterian Competition and Innovation

3.1. Transformative/Radical Innovation

Innovation is the fundamental concept of Schumpeter's analysis. The unifying principle of his theory. Schumpeter defines innovations sometimes as... "The introduction of new production functions", sometimes describing its forms of manifestation: "new products, production or transport methods, forms of organization, markets, and sources of raw materials, " [which result in] ... "formation or annulment of a monopoly position" (Schumpeter: 1912, chap. 2).

These definitions are, however, problematic. The first, for being excessively restrictive and anchored in specific modelling of the firm by the economics; the second because it is not exactly a definition, but a taxonomy, without clarifying the mechanisms by which “monopoly positions” are created or nullified.

An alternative, more synthetic, abstract, and precise way of introducing the concept of innovation would be to define it as 'the application of new ideas to the economic sphere, the result of which is the expansion or reformulation of the existing economic space'⁸, and, in the case of 'transformative/radical' innovations, to the formation or cancellation of a monopoly position. This alternative definition is not Schumpeter's, but it is entirely compatible with his, and in fact more theoretically adequate, as it is conceptual and abstract, yet capable of absorbing the entire Schumpeterian taxonomy.

The type of innovation to which Schumpeter turns most of his attention in his analysis is one that represents a break with the previous pattern of behavior of an industry or economy, named here as 'transformative' or 'radical'. It is not a change in the margin, nor is, as a rule, caused by the relative scarcity of production factors, which does not exclude this motivation as a possibility.

Transformative innovations are motivated by the perception of market opportunities; of gain by special individuals – or companies – endowed with vision, boldness, initiative, and organizational capacity. That is, entrepreneurial individuals or companies. Such innovations eventually spread across productive sectors, germinate, and convert themselves into tens, hundreds, or thousands of applications. It is from them that the structural change in the economy arises.

Indeed, the most transformative innovations are those that evolve into 'general purpose technologies'. N. Rosenberg and C. Freeman are, from the Schumpeterian perspective, pioneers in the deepening of this discussion (Rosenberg: 1976, 1982 and Freeman: 1974, 1982). Freeman (1982) makes this point clearly:

“The macro-economic effects of any basic innovation are scarcely perceptible in the first few years and often for much longer; what matters in terms of economic growth, investment and employment, is not the date of the basic innovation, important though that may be for historians; what matters is the diffusion of basic innovation, the swarming process, the period when imitators begin to realize the profitable potential of the new product or process and start to invest heavily in that technology”.

So, in fact, Schumpeter didn't lose sight of the fact that transformative/radical innovations coexist with, and feed from, "incremental innovations." These constitute, thus, changes on the margin since the radical innovations. Furthermore, he advanced an extremely penetrating set of linkages among innovation,

⁸ This expansion or reformulation can occur through the availability of new products and services, new raw materials and production processes, new forms of organization, new business models, new markets, and productive sectors. This result is not necessarily captured by statistics, although its impact can be gigantic. Not all the effects of the processes of “expansion or reformulation of the economic space”, even if they are transformational/radical, can be adequately measured. It is worth comparing this definition of innovation with the one suggested by the MIT's Innovation Initiative: “process from taking ideas from inception to impact”; simpler, but ultimately with the same meaning (Budden & Murray, 2019:3).

competition, and their macro-financial impact. This is a promising research area, still in need of attention and elaboration⁹.

Different ways of classifying innovations maintain this 'dual' perspective. Pisano (2019) offers a 2x2 matrix in which he identifies “routine innovations” in contrast to an arc of innovations that demand substantive changes in business models and/or in technological knowledge. Budden & Murray (2019) refer to how the MIT Innovation Initiative identifies polar points in the spectrum of Innovations. There is what they call formal 'Innovation' (with the capital “I”), meaning either the processes of taking novel S&T research and development (R&D) outputs, or transformative innovations (matching novel solutions to novel problems), from inception through to impact. Such an impact is often described as being out on the frontier in the '10x' transformation category.

On the other hand, there is a more modest form of innovation that covers the innovative adoption or adaptation of existing technologies, practices, and resulting capabilities, i.e., innovation with a small “i” which would fall into more of a '10%' gain category: this signifies a more widely applicable set of innovative behavior seen in private (but now also in many public) actors.

In another approach, Christensen's (1997) well-known distinction between sustaining and disruptive innovations is Schumpeterian to the core, as his definitions relate directly to competitive outcomes (though different in their meaning from the technical radical/incremental duality). Even matrices for innovation projects portfolio management that consider “adjacent” or “intermediate” innovations keep this polar perspective as a basis and tend to associate adjacent movements with more incremental innovations (e.g., Nagji and Tuff, 2012).

In any case, either being “radical” or “incremental”, all these innovations also involve creativity and will have unforeseen competitive effects, especially when associated with business models able to understand, and extract, their potential.

3.2. The Intertwining of Transformative and Incremental Innovations

'Incremental innovations' are a fundamental link in materializing the increases in productivity, investment, and production, made possible by 'radical innovations'; and a “permanent fuel” of inter-capitalist competition. In the ftn.2 of ch.7 in the CSD (1942:83), Schumpeter recognizes that transformative

⁹ Related to innovation diffusion, Burlamaqui identifies a particularly brilliant analysis by Schumpeter in his Business Cycles book (Schumpeter, 1939). There, Schumpeter develops an analytical approach for understanding the impact of innovation diffusion which has clear “macro financial” ramifications for the whole economic system: he describes the phenomenon of the “secondary wave”, a move through which the initial cluster of localized entrepreneurial activity and credit creation spread through the system via an interaction of multiplier effects, monetary expansion, and non-innovation related credit creation, leading to increasingly reckless business and banking practices. Burlamaqui argues that the penetrating “macro financial” analysis of the ‘secondary wave’ as developed by Schumpeter provides a clear anticipation of Minsky’s financial fragility hypothesis.

innovations are not incessant, and between them, there are intervals of relative calm. But the innovation process continues incessantly, albeit by absorbing the results of the previous transformation¹⁰.

Although he recognizes its importance, Schumpeter does not go into depth in the analysis of its implications. And here it seems reasonable to expand Schumpeter's representation of the process of competition and innovation using, as a starting point, E. Penrose considerations in her preface to the 3rd edition of her remarkable classic *The Theory of the Growth of the Firm* (1995: ix-xxi).

Penrose highlights that Schumpeter recognizes that the 'revolutions' in capitalism are not incessant but occur in 'discrete rushes'¹¹. She is clearly more comfortable with the recognition, by Schumpeter, that, in capitalist competition, industries, or, in modern parlance, business ecosystems, go through periods of transformation and periods of incremental change, when competing firms, customers, vendors, complementors, channels and add-ons wobble and evolve around certain parameters of behavior. This is when it could be said that a given sector is "in regime" (which is close to what Pisano (2015:24) defines as "stable competition"). And where the learning advocated by Penrose (1959) has prominence.

Penrose, in her reading of Loasby (1991:61), notes the potential of F. Hahn's consideration of what such a state of 'dynamic stability' could be like, assuming 'balance' as synonymous with stable patterns of behavior of the economic players in the real world (Hahn, 1984:59).

In fact, we may extend Hahn's considerations to understand this state of 'balance' of an industry or business ecosystem as one in which the generation of "novelties" by reality does not lead agents to change their 'theories about how the industry or ecosystem works', and, therefore, the business policies that they pursue (that is, their strategy)¹². In other words, agents continue to innovate continuously, but generally incrementally (i.e., in a non-transformative way) and in line with their current dominant understanding of the 'strategic context' (Burgelman, 1983)¹³.

This understanding of an industry ecosystem in a state of "dynamic stability" (or "in regime) allows us to differentiate situations in which structural changes are taking shape – the moments of the irruption of transformative innovations, either on the demand side ("disruptive", as in Christensen, 1997) or on the supply side ("architectural", as in Henderson and Clark, 1990¹⁴), as explained by Gans (2016). This is the

¹⁰ This is exactly the model of "Technological Discontinuity" as described by Anderson & Tushman (1990).

¹¹ Though, of course, the impact of a radical innovation may take decades in developing, and in the process give birth to another round of novel innovations.

¹² It is in this context that we find equivalence to the well accepted concept of "industry recipes" for conducting business by Spender (1989), when firms within an industry, or within the same strategic group of an industry, often think in the same general ways about how all businesses work.

¹³ Burgelman (1983) original concept already comprehended an interesting ambiguity and a pertinent complementarity between the firm's 'perception' of the context and the reality from which such perception takes shape.

¹⁴ Teece (1984) identified them earlier as 'systemic'.

moment that holds all of Schumpeter's attention as it is the generator of the 'perennial gale of creative destruction' occurring throughout the entire economy¹⁵.

It is worth noting, however, that a cumulative process of incremental innovations or initially incremental changes in aspects of the ecosystem (products, processes, business models, customer behavior, etc.), and/or in its institutional context, can lead to tipping points analogous to radical/transformational innovations, i.e., when the firm's management 'theory of the industry's functioning' 'collapses' – when it is no longer able to understand and deal with the competitive reality and is compelled to rethink the whole ecosystem and *try* to redefine its business policies¹⁶.

This representation of Schumpeterian competition with two “moments” is entirely compatible with the general logic expressed in CSD, and links naturally with his broader discussion of innovations¹⁷.

As for the impact of innovations, it is pertinent to specify the different angles from which they can be perceived:

- Macroeconomic impact: uneven expansion, and changes in the system parameters (or, in Keynesian terms: increase in productive capacity and effective demand, and changes in short- and long-term expectations).
- Economic structure as a whole: creation of new sectors and rejuvenation of existing ones. In other words, a permanent recycling of the economic space, through its reformation or expansion.
- Competition: the creation of competitive asymmetries and reconfiguration of market structures. In contemporary language, reconfiguration of business ecosystems (Adner, 2021; Adner & Liberman, 2021), and/or redefinition of competitive arenas (McGrath, 2013; 2019).
- Corporations: gains in productivity, efficiency, and/or performance or quality, and the temporary monopolization of market opportunities, resulting in superior performance and extraordinary profits. This last issue provides a key link with dynamic capabilities. Let's explore it.

¹⁵ This would be Schumpeter's 'radical innovation', the one that leads to structural change. But there may also be structural changes arising from changes in the regulatory frameworks that govern competition in the sector (e.g., the civil aviation sector in the US in the beginning of the 80's) or from major events in the macroeconomic/macro financial field (e.g., the 2008 financial crisis) or in the geopolitical sphere (e.g., the 2022 war in Ukraine).

The “perennial gale” does blow all throughout the economy, but it takes different speeds and intensity industry by industry at each moment in time.

¹⁶ Adner (2021) brings an interesting analysis of the case of Kodak, where the collapsing point for the company business was not the digital camera, as commonly believed, which in fact allowed Kodak to brought up a new business ecosystem where it thrived; but the increasing quality of smartphone cameras and digital screens, which, after incrementally improving and surpassing a certain quality threshold, led consumers to assume that digital copies of their photographs were good enough for all their photographs uses, eliminating Kodak products associated to printing them from the whole consumption loop.

¹⁷ Under this perspective, “stable competition”, “Schumpeterian entry” and “Penrosian dynamics”, as distinguished for illustrative purposes by Pisano (2015), all happen in the context of Schumpeterian competition as defined here.

3.3. Innovation and Profits: Schumpeter's Perspective

In Schumpeter's theory, profits are the reward – in the form of financial return – for successful innovation, the result of increased productivity allied to the creation or capture of market opportunities, and the construction of "isolating mechanisms" (as identified and named by Rumelt, 1984) that result in the difficulty of imitation. They are, therefore, a consequence of business activity.

Profits are formed in the process of competition and must be understood as resulting from the temporary scarcity resulting from innovations: innovators are monopolists (albeit temporarily). In other words: innovators are "quality", "price" and/or "cost" makers. From this perspective, profits have, in the Schumpeterian theory, two origins, which complement and add up, but which are analytically distinct:

- When extracted from innovations that increase efficiency – that is, when derived from the introduction of product redesigns, process, organization, or management innovations – there is a dimension of expansion of the surplus by decreasing costs or increasing the firm's productivity, with an expansion of the space for appropriating value by the firm, or opportunities to reduce prices and increase markets reached by the firm. This is the dimension of profit built from strategies for efficiency and productivity, and/or for improving bargaining conditions with suppliers of all types.
- When extracted from product new designs, new marketing strategies or customer relationships and complementary innovations, profits derive from differentiation strategies and processes, from an increase in the value created for customers, with the consequent increase in their 'propensity to pay', making room for price increases or for an expansion of sales in new markets, and to keep complementors happy but without having ways of changing their relative value capturing position.

Innovations both in products and in relationships or processes can, and typically are, drivers for building 'isolating mechanisms' (legal protection, specific capabilities, privileged relationships, etc.), which allow the continuity of profits that rest on the difficulty of imitation¹⁸. This is a dimension of "Ricardian rents"¹⁹ that may prove to be intrinsic to so-called Schumpeterian profits over time.

Both the 'efficiency' dimension and the 'differentiation' dimension reflect different aspects of this temporary scarcity and must relate to the monopolistic aspect inherent to the profits generated by innovation highlighted by Schumpeter. Schumpeter, however, only makes this fact clear in his 1954 book:

"Entrepreneurs' gains will practically always bear some relation to monopolistic pricing. Whatever it is that produces these gains, it must be something that, for the moment at least, competitors cannot parallel. The

¹⁸ Mechanisms which the Resource-Based-View in Strategic Management has deeply studied. See Rumelt (1984) for the original definition of isolating mechanisms.

¹⁹ Which is equivalent, in Ricardo's model, to the gains obtained by landowners, because of the degree of fertility of their lands, which is impossible – or very difficult – to be imitated because it is dictated by their scarcity.

best example is the offering of a new product or a new brand. And temporarily, at least, there are means available to successful entrepreneur-patents, 'strategy,' and so on for prolonging the life of his monopolistic or quasi-monopolistic position and for rendering it more difficult for competitors to close up on him" (Schumpeter, 1954: 893; 897-898).

Profits in Schumpeter have important consequences for systemic productivity and economic expansion. From his innovation-routed perspective, profits materialize in the expansion of the product and surplus. This expansion is not, as Schumpeter underlines, immediate. It results from the process of diffusion of innovations, which will eliminate the scarcity inherent to the introduction of innovations, and, by imposing an intensification of the competitive process, press down on the profit margins of all competitors. This pressure on margins, coupled with the increases in productivity brought about by typically incremental innovations, is key to understanding the process of creative destruction. It is the joint effect of these two factors – diffusion and incremental innovation – that imposes the "new" on the "old" and, in doing so, periodically rejuvenates the production system.

In this sense, it is worth noting that the "Ricardian rent" component does not necessarily unfold into gains for systemic productive "quality". On the contrary, it can be unproductive, or even destructive, insofar as it rests precisely on the imperative of the difficulty of imitation. The difficulty of imitation, which is also built through specific strategies for such, not only does not imply systemic increases in efficiency or productivity, but it can also produce its opposite: obstacles to the diffusion of innovations, and gains based on their delay; just the opposite of gains coming from the process of product and surplus expansion resulting from increases in investment and productivity associated with them.

Here, we should point out that Schumpeter himself was not particularly concerned with these "negative", or even destructive, dimensions of corporate returns. His focus is predominantly on the positive aspects. William Baumol, in a brilliant essay (Baumol: 1993), called attention to the unproductive and destructive dimensions of entrepreneurship²⁰. From our contemporary perspective, it almost goes without saying how right Baumol was. The essential element to retain here is that corporate returns comprise both value creation and value extraction²¹. A contemporary theory of corporate performance, or "value creation", must start from this fact²².

One last, but noteworthy, point still to be touched here, and which does not receive an extensive or careful response in Schumpeter's writings. It concerns the "origins" of successive waves of innovation. Burlamaqui (2019a,2022) highlights some clues offered by Schumpeter to reflect on this. They point to the fact that

²⁰ See also Burlamaqui, Castro, and Kattel (2012) for approaches to the necessity to "govern knowledge", to counteract the unproductive and destructive dimensions of corporate strategies.

²¹ Teece propositions about who profits from innovation in which conditions (Teece, 1986; 2006) are relevant contributions in this regard.

²² Mazzucato (2018) and Lazonick (2014, 2019) are among the researchers pursuing that track.

capitalism, by concentrating human energy on economic tasks, and by offering significant rewards for expanding the existing economic space, creates an extremely favorable environment for the application of new ideas to the productive sphere. There is a particularly illuminating passage in this regard in CSD:

“Bourgeois society has been cast in a purely economic mold: its foundations, girders and beams are all made of economic substance. The building is oriented toward the economic side. Prizes and penalties are measured in pecuniary terms. Going up and down means winning and losing money.... The promises of wealth and the threats of destruction he makes, he fulfils with rude haste. Whenever the bourgeois way of life asserts itself with sufficient force to dim the lights of other social worlds, such promises are enough strong to attract the vast majority of above-average brains and to identify success as “success in business” (Schumpeter: 1942 pp. 100-101).

We can compress that by stating that capitalism is the social system where economic values assume a position of cultural hegemony in society. The perception of this fact undoubtedly contributes to clarifying the essentially economic nature of its dynamism. It is in this sense that Schumpeter's assertion that the economic achievements of the capitalist epoch must be attributed to the capitalist system and not merely to technical progress, considered as something independent and exogenous, is a statement that should be underlined²³. Showing 'how' this process develops was exactly the task that occupied carried him throughout his intellectual life.

Here, Dynamic Capabilities enter the realm of our discussion. We will indicate both its convergence with the creative destruction paradigm and the potential to enhance it. By providing an understanding of how the successful capitalist enterprise organizes itself to promote continuous innovation, the DC approach highlights the centrality, for the corporation, of the imperative of endogenizing the creative destruction process in both its strategy and its organizational structure.

4. The Dynamic Capabilities framework

4.1. Genesis

The development of approaches to explain and prescribe policies for obtaining above-normal profits has historically guided the evolution of the Strategic Management discipline. Following the definition of what is a good strategy as formulated by Rumelt (2011: chap.5), with its trinary ‘diagnostic – guiding policy – actions’ model, it can be said that what was sought was to provide Management with frameworks and tools for the diagnosis of the competitive situation of the firm and guidelines for the appropriate business policies

²³ This is a crucial consideration by Schumpeter concerning his understanding of how capitalism works, which allows, among other things, for highlighting the core role of the entrepreneurial firm – the main agent of transformation – in any economic development process, and the safe consideration of business model innovation as part of his range of types of innovation, even if the concept was only in its beginnings in the mind of his friend Peter Drucker.

given the circumstances, even if the discipline felt short of being able to objectively prescribe a particular strategy for a given situation²⁴.

How does the DC framework link with strategic management? To answer this question, one must consider the evolution of the discipline. The usual starting point for presenting the trajectory of the more consistent instruments of the discipline is the development of a pedagogical way of bringing the discoveries of the industrial organization studies in the Mason-Bain tradition, with its structure-conduct-performance model, to be a part of the practical management approaches toolbox. This was the role of the so-called 'industry structure analysis' model, developed by M. Porter, which became a powerful 'cognitive artifact' – a tool to frame the work of analysis, reflection, and decision of the strategic manager, allowing him to make sense of the world around, and decide the course of actions to take. This model was widely used and became known worldwide as "Porter's 5 forces" (Porter, 1980).

Starting from the contrast with the conditions of "equilibrium", the model examined the barriers and forces that would allow for over-profitable positions in certain sectors. As for competitive positioning, although Porter initially established a Cartesian distinction between generic strategies centered on low cost, differentiation, or opting for a specific market focus, he later complemented his approach by developing an analytical tool aimed at diagnosing the relative status of the firm's activities considering cost and differentiation status and drivers, which he called the Value Chain (Porter, 1985)²⁵.

Developed from research in Industrial Engineering and Accounting, the Value Chain brought the analysis to focus on the firm. Considering the analytical work based on its own Value Chain and those of competitors and customers, it would be possible for the firm management to conceive and define the aimed competitive position in a more refined way.

Game Theory brought complementary contributions, presenting interesting approaches for specific applications, in capacity strategies, pricing alternatives and entry deterrence. It is also worth pointing out the emphasis that the "Value Net" brought to the Complements that were relevant to the firm competitive positioning, a dimension of utmost importance when studying strategy as cooperative and non-cooperative games (Bradenburger and Nalebuff, 1996). Within the scope of the discussion of a Value-based business strategy, Bradenburger discussed the logic of value creation and capture within a given competitive

²⁴ Given the complexity and uncertainty involved, there has never been an empirically grounded set of 'technological rules' in the form of a "in circumstances X... if Y...then Z..." formula in Strategic Management. This is the famous "dirty little secret" of the strategy industry, according to a famous quote by Professor Gary Hamel: "Of course, everyone knows a strategy once they see one – be it Microsoft's, Nucor's, or Virgin Atlantic's. Anyone can recognize a great strategy after the fact. We also understand planning as a 'process'. The only problem is that process doesn't produce strategy – it produces plans. The dirty little secret of the strategy industry is that it doesn't have any theory of strategy creation." (*Forbes Magazine*, 23rd June 1997:17).

²⁵ For Ghemawat (1999), this instrument is a direct descendant, relevantly enriched, of the 'business system' modelling, an approach previously developed by McKinsey & Co.

positioning, along a framework that Oberholzer-Gee would later call the Value Stick (Bradenburger & Stuart, 1996; Oberholzer-Gee, 2021).

Although useful, these approaches could not explain the high level of variability in the performance of different firms within a certain sector (industry) for long periods (as evidenced by Rumelt, 1991/1994). Although undoubtedly relevant, the fit between the different activities along the Value Chain (Porter, 1996) proved to be an insufficient explanation to account for the variety of relatively successful positionings and their sustainability through time in a specific industry.

In fact, during that same decade, academic research in Strategic Management was following an alternative path. Based on the seminal work of E. Penrose (Penrose, 1959), the firm was identified as a set of Resources, resources that were activated in a unique way by each firm to provide the specific services it needed. A "Resource-Based View" (RBV) took shape (Teece, 1980; Rumelt, 1984; Wernerfelt, 1984; Barney, 1986; Dierickx & Cool, 1989; among others), which recognized the heterogeneity in resources and capabilities (the 'services' obtained from the firm assets by the firm's organization and management) among firms; and the conditions that lead to the difficulty in overcoming such heterogeneity. Therefore, the intra-sectorial differences in performance could be explained (Peteraf, 1993).

The RBV was consistent with the logic of value creation and appropriation previously established in the discipline, and offered, with its focus on the strategic relevance of resources a plausible explanation for the coexistence of different forms of competitive differentiation in the same industry (i.e., different successful competitive positions). It overcame initial criticisms as to their tautological character highlighting the role of the demand in defining a resource's value creation potential and established itself as a key canonical approach in the Strategic Management field (Peteraf & Barney, 2003; Collis & Montgomery, 1997).

Pisano (2015) highlights that the RBV proved to be particularly effective in the discussion of corporate diversification, which would be explained not only by its origins in the considerations of Penrose (1959), but also in the pioneering study by Rumelt (1974) and his conclusions on related diversification. Later, it was the popular concept of the Core Competencies of a corporation (Prahalad and Hamel, 1990) that marked the arrival of the RBV to the forefront of the discipline.

There remained, however, one key question. Unquestionably, a firm's resource base evolves over time. And some firms *consistently* drive their resource base evolution better than others. This includes developing their knowledge base, skills, and capabilities. It made no sense to imagine that the dominant motive for a given successful resource base to take shape is centrally luck or chance; reality strongly suggests that there is managerial discretion in the process and that there is strategically weighted allocation underway. This is a proposition made by Dierickx and Cool (1989): that the RBV points out as a key dimension of the design of a strategy the task of choosing the allocation of investments with the aim of accumulating resources.

In a way, this question goes back to Penrose (1959) in the strategic management-related literature: it is about understanding and differentiating “administrative management” from “entrepreneurial management”²⁶. This second kind of management was then not yet properly considered in the Strategic Management discipline. The field was still under the strong influence of static theoretical foundations – either neoclassical economics or game theory. However, several influences converged to shape a new proposition within the discipline.

The '80s and the 90's witnessed an impressive process of generation and adoption of innovations by Corporations from different fields, and in different sectors. Unsurprisingly, references to the work of Schumpeter returned to the discussion, though his theoretical contributions remained vastly ignored by the mainstream, in the fields of Business Strategy, and Strategic Management.

However, since the early 1980s, proponents of an evolutionary approach to economics, an alternative to neoclassical economics, joined the discussion of business strategy (Nelson and Winter, 1982; Teece, 1984). Furthermore, besides Penrose’s contribution, the, now classic, books by A. Chandler Jr. (1977, 1990) had already demonstrated that organizational capabilities are needed to ensure or sustain the firm's competitive positioning over time. In evolving markets, the dynamics of development and accumulation of organizational capabilities emerge as a central issue²⁷.

This is the context where a perspective focused on the firm's “dynamic capabilities”, understood as an essential contribution to Strategic Management, took form. Strategic management deals with irreversible choices, immersed in trade-offs, in the face of different kinds of uncertainties (Ghemawat, 1991; Porter, 1991/1994). Firms have different options for organizational capabilities to develop, and choices about which capabilities to develop are critical in business strategy.

The relevance of an organization's capabilities to its competitiveness is, as already mentioned, identifiable in Penrose’s theoretical propositions about the crucial nature of the services that management obtains from the firm's resources (Penrose, 1959). But it is Richardson (1972) that is usually credited with introducing the term ‘capabilities’ into the debate in organizational economics.

The need for capabilities to deliver a proper performance in the firm’s present markets was quite clear, and part of the early definition of the firm resources set by the RBV (“operational capabilities”). The point was the lack of a framework with a conceptual structure that explained the endogenous mechanisms of the firm’s ability to change its resource base amidst an evolving and/or changing business environment.

²⁶ In fact, one may argue that this issue goes back to Schumpeter (1912), when he distinguishes “managers” from “entrepreneurs”, under a different framework.

²⁷ Organizational Capability is a complex concept in management and cannot be reduced to a simple relationship between standard input/output variables (see section 5 of this manuscript). In a general manner, it refers to a specific skill of the organization that allows it to achieve certain performance results, in different dimensions.

In 1997, Teece, Pisano, and Schuen started to fill that gap. The seminal article by them, published in 1997, was a cornerstone for the emergence of Dynamic Capabilities as a key turn in the field of Strategic Management. In that paper, the authors considered three crucial aspects to compete in an assumed dynamic environment:

- 'Positions', understood as positions in tangible and intangible assets ('resources'), which constrain the options open to companies, limiting them, but not imposing a single path.
- 'Processes', understood as 'higher order processes' (associated with the firm's governance and strategic management) to reflect and systematically reconfigure the 'positions' in assets, associated with the so-called firm's 'dynamic capabilities'.
- 'Paths', associated with the firm's commitment to certain trajectories of development of its capabilities, among a range of possible alternatives, as a bet for the establishment of a superior and defensible competitive position.

The strategic question to be answered was clear: *which capabilities were necessary to reach a competitive position, and retain it?* This fundamental question begged others: How to develop not only the operational capabilities necessary to sustain the desired competitive position but also the capabilities needed to renew and upgrade them? How to sustain the self-renewal of the corporation over time (i.e., how to develop dynamic capabilities)?

One is clearly talking here about the definition, selection, and 'retention' (implementation and maintenance) processes identified in the research on resource allocation processes (Bower & Gilbert, 2005)²⁸. There is no doubt that this is a key management decision, conditioned by the legacy of the past and informed by expectations of the future, which are inherently uncertain.

Since the publication of the paper, and even before²⁹, the proposition of a relatively consistent framework, from an evolutionary (or, in the terms of this manuscript, Schumpeterian) perspective for the analysis of the firm's strategy found wide resonance in an academy eager to cope with an economic landscape that was in full swing. As major bibliographic reviews would attest almost one and a half decades later (Di Stefano et al., 2010; Peteraf et al, 2013; Schilke et al, 2018), the profusion of articles on the subject made "dynamic capabilities" one of the most influential theoretical lenses in Strategic Management research (Di Stefano et al, 2014). Assumed as a continuity of the RBV, but distinct given its Schumpeterian origins, even though some disagreed that it was something substantively different from the RBV (e.g., Barney, 2003), the framework became enormously popular in the Strategic Management academy. This profusion, however,

²⁸ And, yes, this is the evolutionary process as described by Darwin. Hodgson (2019) makes a point for evolutionary thinkers to always remember this.

²⁹ Preliminary versions of the article have circulated since 1990, and in fact one version reached one of the authors (Proença) during his doctoral work in 1992 (Teece et al, 1990).

and probably unavoidably, became filled with multiple interpretations. And confusion. Though usually announced as coming from the ideas of Teece et al. (1997), the concept has been reinterpreted in different ways.

4.2. Early evolution

By the middle of the 2000s, a definition of what a firm's dynamic capabilities were reached a relatively stable form. The consensus seemed to be the "firm's ability to integrate, build, and reconfigure internal and external competences to address (rapidly) changing environments. Dynamic capabilities thus reflect an organization's ability to achieve new and innovative forms of competitive advantages, given path dependencies and market positions (. . .)." (Teece et al, 1997); or "[Dynamic] capabilities can be harnessed to continuously create, extend, upgrade, protect, and keep relevant the enterprise's unique asset base." (Teece, 2007). Or, more simply and directly, "... the capacity of an organization to purposefully create, extend, or modify its resource base." (Helfat et al, 2007). The 'resource base' encompasses the firm's external relations, which implies that such capabilities include the shaping of the external environment, in particular its business ecosystem, in its range of considerations (Teece, 2007; Helfat & Winter, 2011). These definitions prevented the so-called 'tautology trap', by highlighting the meaning of dynamic capabilities as a capacity for changing the organizational resource base and/or its external environment, without making capabilities an equivalent to performance or strategy (a mistake that had been noticed, among others, by Zahra et al, 2006).

Another important conceptual refinement was the proposition that dynamic capabilities work in different orders in terms of the effects of capabilities on capabilities, starting from a 'zero level' associated with operational (or ordinary) capabilities, and going up the ladder with first-order and second-order dynamic capabilities (Collis, 1994; Winter, 2003; Zahra et al, 2006; Helfat & Winter, 2011).

The proposition was that a firm's capabilities could be identified within the scope of two general categories: (1) operational (or ordinary) capabilities, which are directed toward maintaining and leveraging the status quo in terms of the scale and scope of activities, businesses, product lines, customer segments, and the like; and (2) dynamic capabilities, which are directed toward strategic change. These would be, as indicated above, the capabilities that would effect changes in the firm's existing resource base and in its markets and business ecosystem in a purposeful way. The dynamic capabilities would change the resource base, and the (new) base and the (new) ordinary capabilities would provide better competitive performance (Proença, 1999; Burlamaqui e Proença, 2003).

Assuming capabilities as routines, and dynamic capabilities as a collection of higher-level routines, which are all reinforced by exercising them over time, it becomes evident that operational and dynamic capabilities are the product of investments, and reflect strategic commitments, being strongly associated

with sunk costs (Ghemawat, 1991). As Winter (2003) noted, given the requirements in training, procurement of hardware and software, and the design and appropriation of organization-specific routines that deliver the desired performance, it is to be expected that the upfront cost incurred would be a sunk cost (i.e., non-recoverable through sale). And therefore, that dynamic capabilities cannot be bought; they must be built – a remark that would remain as one of the tenets of the DC framework³⁰.

The presence of robust sunk costs tends to make investments in dynamic capabilities expensive bets, which only pay for themselves if they promote, along with operational capabilities, relevant gains in costs and/or in differentiation. The revenues generated need to pay not only for the firm's operating costs but also for the investment in developing and maintaining its dynamic capabilities. This implies, for Winter (2003), that the generation of dynamic capabilities by the firm must be continuous, as it is characteristic of a 'routine', to recurrently generate advances in its operational capabilities, which in turn would generate greater revenues under better conditions for appropriating value. Under such a perspective, *ad hoc* decisions would not be part of the firm dynamic capabilities set.

Decisions on which capabilities to bet when facing trade-offs imply important strategic commitments. If we accept that, there is no way to agree with Porter (1996) that the investment in operational effectiveness does not include a strategic dimension. The way in which a given positioning is achieved, and the learning it entails are crucial, as they set the conditions for what can and cannot be done later (Hayes and Pisano, 1994; Proença, 1994). Operational and dynamic capabilities do not fix a destination; they limit the firm's options, but they are also what sustains new trajectories. The design and development of a capability strategy is clearly part of the strategic management agenda of the firm (Pisano, 2017).

Helfat et al (2007) developed a collective effort to consolidate the concept and its reach. Among other contributions, their book distinguishes technical fitness – associated with the idea of quality (multidimensional) per cost unit – which, combined with the market demand for capability output and competition from, and cooperation with, other firms, lead to the interesting concept of “evolutionary fitness”.

Evolutionary fitness refers to how well a dynamic capability enables an organization to develop a new living by creating, extending, or modifying its resource base through time. Performance measures of such evolutionary fitness include the firm's survival, growth, value creation, competitiveness, the sustainability of its position, and its profits (Helfat et al., 2007: ch.1).

³⁰ This is an issue emphasized, for instance, in Teece (2019). It is relevant, to avoid any confusion, to point out here that, for instance, a corporation may buy a start-up to bring certain capabilities to its set of resources. But even then, such capabilities will never be there ready per se; the corporation will have to devise ways to integrate the start-up technologies and processes (and its personnel) with their own and establish a proper governance and management mode to reach the full desired performance of the acquired asset.

There is also an emphasis on “asset orchestration” as a key executive function in a dynamic environment (2007: ch.2). The orchestration of assets takes place in the face of “thin markets” – markets with low liquidity, and where price formation mechanisms cannot work. Several intangibles such as technological and managerial know-how, or intellectual property rights, are markets of this type (Teece, 1980). In this case, internal resource allocation and transfer of assets need to be performed by the firm's own management. Furthermore, by their nature, these assets gain more value when they can co-evolve in a coordinated way with other assets. Bringing together and coordinating specific configurations of co-specialized assets is all about creating and protecting (and appropriating) value.

Asset orchestration, understood as a fundamental management function, gains crucial importance in dynamic settings. Asset orchestration includes identifying complementarities, buying, or building missing assets, and then aligning them. In dynamic markets, the way the firm orchestrates its assets shapes the market, and the way the market develops shapes the firm: they co-evolve.

As markets evolve and become more competitive and highly efficient, the opportunities to establish competitive differentials diminish. However, changes in the behavior of agents in the business ecosystem, in regulatory rules, and the materialization of technological innovations may create new market opportunities. The dynamic capabilities of the firm have the role of seeking which benefits may come from these dynamics, defining whether to conform to it or to react to it strongly and intelligently.

Another important aspect of dynamic capabilities relates to the firm's ability to learn, i.e., how to evolve its performance is a core dynamic capability. As Zollo and Winter (2002) make clear, how organizations develop and integrate new resources and capabilities is part of the more general concept of ‘purposefully creating, extending, modifying the firm’s resource base’. And, as would be true for all capabilities, they highlight that dynamic capabilities also develop through learning, involving deliberate learning or learning-by-doing, or both. Some types of dynamic capabilities are capabilities for learning; these capabilities enable organizations to learn, enabling organizational and strategic change. And so, learning is also an outcome of dynamic capabilities (Schilke et al., 2018).

Indeed, even in a market characterized by a stable product market structure, one can find firms that need to cultivate and renew their dynamic capabilities; that is, firms need to continue to develop their resource base and develop new capabilities (Pisano, 2015, 2017). So dynamic capabilities also exist in relatively stable environments as firms expand or otherwise evolve their business (Helfat & Winter, 2011; Schilke, 2014b).

On the other hand, although learning can deepen the competitive differential of a company in its sector, the continuity of this learning may prove inconsistent with changes that are taking place in the sector in which the firm operates³¹. As evidenced by the analysis of the Rubbermaid case (Helfat et al, 2007:49-56),

³¹ A point earlier made by Leonard-Barton (1992), when she identified the concomitant process of building “core capabilities” and “core rigidities” in New Product Development.

though able to keep significant incremental innovations going on in many of its markets, top management's inability to perceive, understand, and act on ongoing major changes was fatal for the company. Not only was the company perhaps unable, but it was also unwilling to respond. There was time to respond – the literature on strategic innovation management points out that the disruptive threat may take years to truly materialize in the market (Moore, 2015; Adner & Kapoor, 2016). But there was no leadership on the part of the CEO to understand the new context and to conceive, structure, and drive change. This was an entrepreneurial problem, and an *ad hoc* one for that matter. Would such an issue stand apart from the DC framework?

The conceptual solution proposed by Eisenhardt & Martin (2000) to deal with this managerial decision space was to assume the recognition that 'simple rules' (heuristics) would be the way to deal with so-called 'very high speed' environments, which impose conditions of high uncertainty (strict uncertainty, a la Knight (1921)), minimizing the scope of the spectrum of dynamic capabilities, assumed as structured 'routines' through which the firm would reach new configurations of resources as markets change, and associable to 'best practices' in innovation management for 'medium speed' markets.

In a way, the concept of simple rules by Eisenhardt & Sull (2001) sought to find regularity in dealing with situations of extreme lack of information, lack of knowledge of probabilities, or even what would be the relevant variables to consider when solving problems not clear, and certainly not structured. This would eventually allow the recurring decision by 'simple rules' to be characterized as a dynamic skill of a higher order, but it wouldn't constitute a dynamic capability. The fact was that the entrepreneurial dimension of dynamic capabilities, and the role of the individual managers in their materialization, had been little addressed in the evolution of the construct thus far.

When examining "dynamic managerial capabilities", Adner & Helfat (2003) observed that managerial decision-making often relies on stable underpinnings that enable practiced and patterned behavior, among them the managerial resources of human capital, social capital, and managerial cognition (the 'mental processes' examined by Helfat & Peteraf (2015)). In this context, Helfat & Martin (2015) noticed the emergence of 'routines' in managers' individual performance. Interestingly as these propositions were, they didn't give the DC framework an internally consistent answer to the challenge of dealing with managerial entrepreneurship.

Ultimately, the issue of the entrepreneurial dimension of managerial activity, with its creative and transformative dimension, so dear to Schumpeter, but also present in Penrose, and Chandler Jr., and which had such repercussions in the writings of P. Drucker, to name a few relevant thinkers, remained poorly explored in the scope of the DC framework. An alternative evolution path was, however, beginning to take shape.

4.3. The “Teece” approach during the 2000s

Schumpeterian competition assumes the centrality of innovation, and the resulting dynamism of its diffusion, as the basis for understanding competition. This dynamic encompasses moments of relative ‘dynamic stability’ as well as moments of ‘radical transformation’. And it recognizes the critical role of entrepreneurship by firms (and individuals/managers) in dealing with this dynamic. A DC framework that does not adequately address all these dimensions would not be able to fit in with the competitive process as understood by Schumpeter in the creative destruction paradigm. In this sense, the recent evolution proposed by D. Teece for the DC framework is indeed welcome and must be considered in depth.

Analyzing the literature on Dynamic Capabilities, Peteraf et al. (2013) note that there are, within the discussion on the subject, two major lineages (“dual spheres of influence”, in the expression used in their paper). One unfolded from the text by Teece et al (“TPS”, 1997), associated with issues in technology, firm performance, and strategy; the other, somewhat looser in terms of disciplinary perimeter, more focused on organizational and behavior theory issues, associated with the influential article by Eisenhardt and Martin (“EM”, 2000).

Peteraf et al. understand that the propositions of TPS (1997) point to a construct designed to answer questions about “how firms achieve and sustain competitive advantage” when “operating in environments of rapid technological change” (TPS 1997:509). This objective is then framed along an approach that considers how a firm can achieve a competitive advantage; how it can sustain that advantage in the face of competition; and – which is the core of the propositions of the article – whether it can accomplish these aims under conditions of rapid environmental change.

Eisenhardt and Martin (2000) assume that the activity patterns associated with dynamic capabilities vary with the context in which the firms find themselves. If in “moderately dynamic” markets the propositions of TPS (1997) can be taken as adequate, in “high velocity” markets the strategic imperatives shift to speed and adaptability, and the character of the (dynamic) capabilities needed changes to a simple form, experimental, unstable, with “unpredictable outcomes” (EM, 2000:1106). In fact, the article ends up considering that such “simple rules” escape what can be defined as dynamic capabilities, which ends up leading to the conclusion that, in this sense, dynamic capabilities could be understood as based on best practices and, therefore, many would not meet the RBV VRIN criteria³².

Peteraf et al (2013) attempt a conciliation between the two branches of the debate, pointing out that, ultimately, EM (2000)'s proposal regarding simple rules could be understood as associated with a higher-order dynamic capability, within the hierarchical structure that Collis (1994) and later Winter (2003) proposed. Nevertheless, the association of the dynamic capabilities construct to the successful execution

³² Barney, 1991. VRIN resources are those that can support a durable competitive advantage: Valuable, Rare, imperfectly Imitable, and Non-substitutable (VRIN).

of best practices was never accepted by Teece³³. In fact, the evolution in his thinking would lead him to undertake a reformulation of the concept.

In parallel to the book by Helfat et al. (2007), of which he is also an author, Teece (2007) publishes a paper in the *Strategic Management Journal* (SMJ) containing an adjusted proposition of what would be the DC framework, focusing on its micro-foundations. The article highlights that crafting a concerted set of processes and routines could be recognized as providing the micro-foundations for dynamic capabilities. These are organized into three broad categories: (1) *sensing*, comprising the identification, development, co-development, and assessment of opportunities in relation to customer needs (which includes activities to shaping the business environment); (2) *seizing*, comprising the mobilization of resources to address needs and opportunities, and to capture value from doing so; and (3) *transforming*, associated with continued renewal of the organization, either in the face of external threats or to reconfigure the organization properly³⁴.

For Teece (2007), engagement in continuous or semicontinuous sensing, seizing, and transforming is essential if the firm is to sustain itself in the face of changes in its competitive environment, which he assumes as the 'business ecosystem' in which the firm operates inserts, defined as the community of organizations, institutions, and individuals that impact the enterprise and the enterprise's customers and suppliers.

In the 2007 article, Teece does not talk about paths, as in Teece et al. (1997). In Teece (2007) the focus is on the goal of pursuing strategic opportunities and on the processes for doing so (i.e., sensing, seizing, and transforming). The idea of a trajectory is not lost but assumed to be the result of the firm's strategy, of its choices, not a part of the capabilities itself. This consideration seems to respond to concerns expressed earlier in the literature regarding the risk of confusion between a firm's capabilities and its strategy (as in Zahra et al., 2006), and is aligned with Helfat et al. (2007) definition. And will be thoroughly assumed in Teece's (2014b) proposition for the DC framework. Teece also distinguishes superior operational efficiency and effectiveness, while competitively valuable, from a dynamic capability.

Finally, in his conclusion, Teece (2007) points out that competitive success demands the creation of new products and processes, and the implementation of new organizational designs and business models, in addition to operational improvements (described as technical fitness) and economies of scale and scope. In

³³ As noted in Teece (2007:1321): "a well understood and replicable best practice is not likely to constitute a dynamic capability."

³⁴ It is relevant to highlight here a clarification presented by Teece (2014:335) about 'Transformation': "But transformative capabilities must also be exercised periodically to soften rigidities that develop over time from asset accumulation, standard operating procedures, and insider misappropriation of rent streams. A firm's assets must be kept in strategic alignment vis-à-vis its ecosystem. Complementarities need to be constantly managed (and reconfigured as necessary) to achieve evolutionary fitness, such as limiting loss of value when market circumstances shift to favor external complements. The strength of a firm's dynamic capabilities determines the speed and degree to which the firm's resources can be aligned with the firm's strategy and changes in the opportunities and requirements afforded by the business environment." In a way, this is the same worry for preventing 'strategic entropy' in a corporation as expressed by Rumelt (2011).

this context, Teece highlights the need for 'entrepreneurial management', which would ensure the evolutionary and entrepreneurial fitness of the enterprise. A truly Schumpeterian conclusion indeed! And he points out that dynamic capabilities reside, to a large extent, in the firm's Senior Management, but that they are impacted by organizational solutions that the company has developed over time, which one may understand as the "Structural Context" of Burgelman's (1983) model.

This is not a minor point. Though Senior Management must have the necessary 'strategic command' of the firm³⁵, and be able to concentrate resources to reach the necessary threshold effect and leverage the firm's assets through a chosen strategy (Rumelt, 2011), smart managerial models (or 'organizational designs') may allow the company or the corporation to develop "autonomous strategic actions" (Burgelman, 1983) to explore opportunities not perceived by the dominant understanding of the environment as assumed by the company.

For instance, the case of Intel's strategic inflection from DRAMs to Microprocessors during the 1980s is quite revealing of the organizational and managerial micro-foundations of its dynamic capability when facing truly existential strategic decisions, combining emergent strategies coming from middle-managers and top-down critical decisions by top management (Cogan and Burgelman, 1989; Burgelman, 1991; Burgelman & Grove, 1996)³⁶.

At the same time, a revised DC framework is taking shape. Teece, together with Mie Augier (Augier & Teece, 2006, 2007, 2008, 2009), focus on the theoretical relations of the dynamic capabilities approach with other perspectives on the firm, and on the role of managers in the context of dynamic capabilities. These articles seek to clarify the theoretical assumptions of the DC framework, helping to situate under which boundaries it would be able to provide insights. The relationships with the behavioral theory of the firm, with the

³⁵ W. Lazonick calls it "strategic control"; see, for instance, Lazonick & Shih (2021).

³⁶ In the same streak, one may assume that well understood and managed "emergent strategies", as conceptualized by Mintzberg and Waters (1985), would allow for a similar managerial pattern. Christensen & Raynor (2003: chap.8) strategic process model seems to aim just that. More recently, Barney et al (2018) argue, reviewing the earlier research about the relative emphasis between centralized and decentralized decision-making (including their own earlier research results), that there is in fact a potential positive effect of the direct engagement of senior management in the entrepreneurial process.

In that sense, it would be proper to assume that in the 'Resource Allocation Process' model (Bower & Gilbert, 2005: ch.20) the "Definition" phase would be shared by top, middle and even operating managers as potential triggers of strategic initiatives ideas, as the CEO and Senior Management may also have a key creative role in many situations, as remarked by Podolny (Bower & Gilbert, 2005: ch.19). Such a model would allow for an understanding of the virtues of combining senior management forest-like perspective of the corporate business environment and thrust capabilities with the middle-management knowledge of the competitive front line, preventing at the same time middle-management "tree perspective" and top management "tunnel vision" risks.

In fact, the combination of ideas and definitions coming from the 'middle-management' and the key decision role the top management team in the strategic innovation process is acknowledged by Teece (2016), who refers to Burgelman (1983) and Nonaka (1988) work. He also refers the remarkable paper on complexity and leadership by Uhl-Bien et al. (2007), as evidence that leadership can potentially emerge at all levels of the organization, particularly in a knowledge-based enterprise. For considerations over the role of middle-managers through the DC framework, see Lee & Teece (2013). For a perspective on emergence under the DC approach, see Kay et al. (2018).

population ecology view, evolutionary economics, and transaction cost economics are then briefly considered.

Augier & Teece clearly distance the dynamic capabilities perspective from a strict population ecology view, by stating that the DC framework assumes the clear role for managerial and organizational agency, whereas the ecology view usually considers path dependencies to be too strong for organizations to be able to adapt. They point to the clear influence of the behavioral theory of the firm, given that the DC framework presumes bounded rationality; the assumption of the dominance of the satisficing criteria (not optimization); highlights the importance of firm heterogeneity; and assumes the role of the firm as a learning center.

They also argue that despite complementarities with transaction cost economics, the dynamic capabilities approach differs from focusing on an opportunity (rather than opportunism), on new resources (rather than existing ones), and on value creation (rather than value protection). Finally, they highlight the great affinity with evolutionary economics, with its focus on industry dynamics, its changing structures, and the role of innovation in capitalist competition.

Furthermore, Augier & Teece highlight the entrepreneurial and non-routine side of business decision-making. The recognition that there is agency on the part of the top management team, and of managers in general, leads the DC framework to assume that there are situations in which managers can move away from the '(bureaucratic) routines to change' established by the organization to those assumed by themselves³⁷.

The conclusion of Teece's (2007) article, and the articles with M. Augier, suggest that, in fact, Teece was then clearly up to something concerning the development of the DC framework. There were also hints about his coming effort in his comments about his Profiting-from-Innovation framework from his well-received paper (Teece, 1986), where he highlights the presence of elements for a Schumpeterian theory of the firm among the paper's original contributions (Teece, 2006).

4.4. Teece's maturation: evolution during the 2010s

In a masterly essay, published in 2017, Peteraf & Tsoukas analyze the inflection in the evolution of the 'Teecean approach', and its implications for the concept of dynamic capabilities. Their examination covers Teece's production till 2014, particularly Teece (2012) and Teece (2014b). In this section, we follow Peteraf and Tsoukas' track, reinspecting and discussing Teece's trajectory, and move forward, in the following section, towards a rekindled conception of the DC framework which links with our understanding of

³⁷ The existence of such 'cognitive routines' would be identified by Helfat & Martin, 2015. In a remarkably positive tone, Teece (2016a) would later refer to the 'signature routines' identified by Gratton & Goshal, 2005. DC would be dependent on the knowledge of individual managers and in idiosyncratic organizational routines - 'signature routines' that have developed over time and would be hard for rivals to imitate.

Schumpeterian competition, as presented in section 3. We submit that the propositions coming from our understanding of Schumpeterian competition allow for a constructive development building on Teece's recent evolution³⁸.

Teece (2012) gives special attention to the entrepreneurial role of the manager in the achievement of a firm's dynamic capabilities: "Unlike ordinary capabilities, certain dynamic capabilities may be based on the skills and knowledge of one or a few executives rather than on organizational routines" (2012:1395). His paper refers to "entrepreneurial management" as a key function in the present "entrepreneurial (managerial) capitalism"³⁹. This way of managing not only involves the practice and improvement of existing routines, but also the creation of new ones. And in a truly dynamically competitive environment, there is a central role for the entrepreneurial manager, both in transforming the enterprise and in shaping the ecosystem in which it operates⁴⁰. Actions that do not emerge from routines nor need to generate new routines.

In the article, Teece succinctly sets out how he understands the hierarchy of capabilities and distinguishes them from strategy. "A firm's ordinary capabilities, if well-honed, enable it to perform efficiently its current activities. However, dynamic capabilities, when combined with a good strategy⁴¹, enable the enterprise to position itself for making the right products and targeting the right markets to address consumer needs and technological and competitive opportunities of the future. The Dynamic Capabilities' approach helps the organization (especially its top management) to develop conjectures, to validate or reject them, and to realign assets as required" (Teece, 2012:1396).

The article preserves Teece's (2007) structure for the firm's activities related to its DC (i.e., sensing, seizing, transforming), and recognizes the markedly organizational character of the firm's capabilities, both ordinary and dynamic. But he goes further and points out that enterprise-level dynamic capabilities go beyond the aggregation of routines.

Routines can point out how projects are managed but do not necessarily describe/guide how the portfolio of strategic projects is identified, prioritized, and selected. There are also strong limitations in characterizing crucial strategizing and 'asset orchestration' activities as routines. And there are many strategic actions and transformations that may never be replicated. There are undoubtedly micro-foundations of dynamic

³⁸ It is worth noting here that in most the articles we reviewed on the DC framework in the Strategic Management literature, the references to Schumpeter reflected his thinking in Schumpeter (1939), which distances them from the radical character of his theoretical conceptions in CSD (1942) and later (as in Schumpeter, 1954). But, in a way, one might argue that Schumpeter's chapter 8 in CSD presents the concept of dynamic capabilities in a nutshell.

³⁹ Teece is clearly highlighting here the entrepreneurial dimension of the 'managerial capitalism' as defined and studied by Chandler (1977) in the USA, and later compared with the British and German cases in Chandler (1990), a dimension recognized as crucial in contemporary capitalism.

⁴⁰ Acting on the environment and 'market shaping' is a dimension included in the concept of dynamic capabilities at least since Teece (2007), Helfat et al (2007) and Helfat & Winter (2011).

⁴¹ Defined by Teece in the terms of Rumelt (2011), a definition with which we fully agree, as remarked earlier in this text.

capabilities embedded in the organization, but, for Teece (2012), evaluating and prescribing changes to the configuration of assets (both within and external to the organization) rests on the shoulders of the top management team.

Teece (2012) explicitly contests Winter's (2003) perspective, for whom *ad hoc* problem solving does not constitute a dynamic capability. For Teece, this would be a false dichotomy. As market-sized transformations are not frequent – for example, by the emergence of disruptions on the supply or demand side, or by changes in the configuration of the business ecosystem – it becomes prohibitive to maintain all the associated high-level capabilities promoting the necessary changes of the firm active in the firm. Some principles and guidelines might be established and shared, but in the face of unprecedented changes, there is little that the top management team can 'routinize'.

For us, in fact, the DC framework should clearly contemplate *ad hoc* strategic decisions, given the structural uncertainty of the competitive landscape, as assumed by the creative destruction paradigm.

The key point of Teece's (2012) article is that it is critical to recognize that the entrepreneurial role of management embedded in dynamic capabilities is not limited to start-ups or a few individual actors. It is necessary to explicitly recognize the “new hybrid” he had been arguing for: 'entrepreneurial managerial capitalism'⁴². For him, it is urgent to recognize that in contemporary capitalism, the act of managing involves a permanent role of monitoring and making sense of the environment, in terms of new opportunities and threats, and creatively acting on it, redeploying resources, and eventually also redefining organizational structure and managerial systems, so that the firm can create and/or overcome changes in its business ecosystem.

Teece proceeds by highlighting the crucial role the CEO may play in this process, and illustrating his argument with the case of Steve Jobs' 'second coming' at Apple⁴³; and how certain corporations managed to approach an internal 'routinization' to sustain their dynamic capabilities with an entrepreneurial character (e.g., IBM; Cisco). He recognizes that the firm's dependence on the profile of a few leaders is dangerous and that entrenchment of an entrepreneurial culture in the organization – and, therefore, in the conformation of a capability of a more organizational than individual nature – tends to be sought after by organizations (illustrated in his paper with the case of the creation of Apple University).

⁴² In fact, as noted before, this wouldn't be in principle theoretically necessary, since Chandler (1977, 1990) acknowledges the entrepreneurial role of managers and top managers in forging American Corporations since the times of the railways.

In Schumpeter's work, particularly in Schumpeter (1942), corporate capitalism is fully entrepreneurial, even if some successful corporations slow down its innovation processes later in their history and fall prey to the Schumpeterian competition process. To keep efficient, competitive, entrepreneurial, and innovative is the real challenge and is to stress the need for doing that in our time that Teece's concept highlights as crucial the entrepreneurial dimension of managerial capitalism.

⁴³ As colorfully named by Deutschman, 2000.

By introducing into the DC framework what previously tended to be considered outside its scope – *ad hoc* decisions – and pointing out the path of the firm's undertaking as inherent to its agenda, Teece is shaping a new direction for the framework he was the lead creator of. This is a point perceived and highlighted by Peteraf and Tsoukas (2017).

Certainly, as Tsoukas and Chia (2002) had already observed, the DC construct is a construct in a fluid state, and it has been going through a process of “becoming”. In fact, bibliographic reviews of research conducted in the context of dynamic capabilities since their genesis have historically found inconsistencies and ambiguities regarding their definition, nature, purpose, and effects, although they typically sought, in their conclusion, to stabilize the construct, its scope, and the agenda of research for its evolution (as in Di Stefano et al., 2010; Peteraf et al., 2013; Di Stefano et al., 2014; and Schilke et al., 2018).

Teece (2014b) consolidates a reformulation of the DC framework since its original starting point. The article has an ambitious horizon and covers an extensive agenda to highlight the scope of what is being proposed. As the author would later name it (Teece, 2017), it was about moving towards the construction of a 'Capability theory of the (innovating) firm', where the RBV is integrated with the perspective of capabilities, at the same time in which it distinguishes the capabilities of the firm's strategy. In Figure 1, originally presented in Teece (2014a), Teece (2014b) provides a graphic illustration of what he proposes as the improved DC framework.

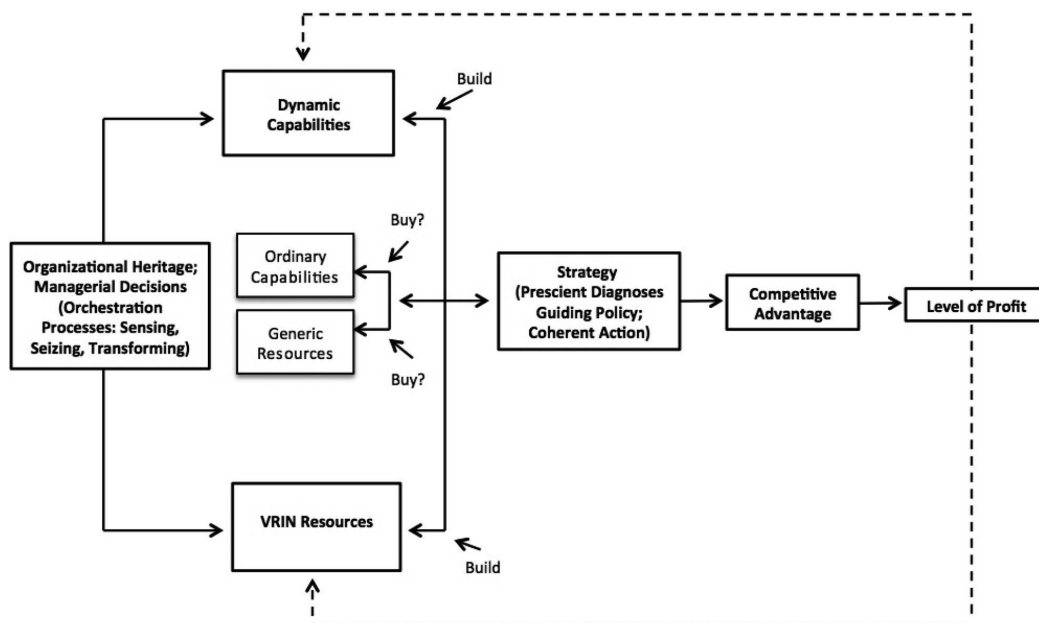


Figure 1 – Teece (2014b:334)

The evolution of the DC framework as proposed by Teece clearly leads to a convergence with Schumpeter's concept of competition, displayed in the creative destruction paradigm. This “refined” version of the

Dynamic Capabilities approach allows us to link it, directly and harmoniously, with Schumpeterian competition, and move towards the seeds of a theory of the Schumpeterian Corporation.

5. Rekindling the DC framework within the Schumpeterian competition perspective

5.1. Operational and Dynamic Capabilities

The first point to emphasize is that coming from a Schumpeterian perspective, it is not possible to fully agree with Peteraf and Tsoukas (2017) when they state that the original DC framework (TPS, 1997) would have an “aspirational” nature. Firms have competed by means of innovation throughout the entire history of capitalism, well before the spread of steam energy usually associated with the becoming of the first industrial revolution⁴⁴. If, in fact, the DC framework always had an abstract nature, being situated within the scope of a higher-level representation of management activities, it nevertheless sought to structure what has been present in dynamic firms for a long time and to highlight what was necessary for survival, and prosperity, in a world shaped by the impact of rapid technological evolution and the emergence of new business models.

The ambition of the TPS framework (1997) was to outline how firms establish the capacity to change the organization's resource base, the set of strategic assets (core resources and capabilities) upon which the firm's business model depends. It is important here to highlight what Peteraf and Tsoukas remark (which has been already commented on): TPS (1997) defines the DC as the centerpiece of an associated framework that was intended to explain how a business enterprise could achieve a sustainable competitive advantage in a highly dynamic environment. The focus, of our reading, was on changing environments driven by radical innovation (see section 3). This is an intrinsically Schumpeterian proposition. But for many authors, the term dynamic capabilities referred plainly to the capacity of an organization to change purposefully.

Teece (2014b) is aware of the dynamic nature of competition, and his may concern is structural transformation, not change per se. His emphasis on dynamic capabilities is based on what he called the “Next-Generation Competition”: “Next-generation competition is characterized by market structures that are fluid, clusters of know-how and technologies that are globally dispersed, competition that takes place between business ecosystems, and innovations that are dependent on combinations of technologies” (Teece 2012: Table 1). He associates this type of competition as present in business ecosystems that experience 'hypercompetition' as characterized by D'Aveni (1994).

Teece (2012, 2014b) is focused then on the radical/transformational moment of the Schumpeterian competition as identified in section 3, above. The focus on this moment somehow ends up interfering with the concept of DC as presented in Teece (2014b), leaving flanks for Peteraf and Tsoukas' criticism. In his

⁴⁴ Drucker (1985), among others, offers many examples of innovations in Europe starting from the XVth century.

defense of a polar option between Ordinary and Dynamic capabilities, and in his denial of gains with greater granularity in defining the range of DC, Teece takes a somewhat confusing and perhaps unnecessary theoretical path⁴⁵.

For Teece (2014b:328) “Ordinary capabilities involve the performance of administrative, operational, and governance-related functions that are (technically) necessary to accomplish tasks. Dynamic capabilities involve higher-level activities that can enable an enterprise to direct its ordinary activities toward high-payoff endeavors. This requires managing, or “orchestrating,” the firm's resources to address and shape-changing business environments”.

Soon after, he states: “Dynamic capabilities govern other organizational activities. They can allow an enterprise to generate higher profits by developing and producing differentiated products and services that address new and existing markets where demand is robust. They enable the firm to integrate, build, and reconfigure internal and external resources to maintain leadership in continually shifting business environments” (2014b:329).

In fact, he defines the agenda that governs the theoretical development of the DC framework in a remarkably straight and clear manner: “What is the inherent source of enterprise-generated future cash flows?” (2014b:329).

It is unreasonable to assume that the firm's pool of resources and capabilities is formed merely by chance (as in Barney, 1986) or to take them as given (as in Barney & Clark, 2007). As argued before, there is agency by managers in the construction of the firm's collection of resources, constrained by the past lived (and by the decisions then taken and implemented)⁴⁶ and by the competitive environment in which it finds itself. From the perspective we took earlier on the nature of capitalist competition, the environment is always changing. What varies from sector to sector, from ecosystem to ecosystem, is the speed and intensity of this change. For analytical purposes, we distinguish, as seen earlier in this text, such intensity in two moments: an “incremental moment” and a “radical (transformative) moment”.

Teece's (2014b) approach makes it difficult to recognize the distinction between the needed capabilities to face each moment. He assumes that the concepts of first and second-order capabilities can be identified respectively with ordinary and dynamic capabilities (2014b:330). He does not consider that there are ‘zero-level capabilities’, which would be the ordinary, or operational, capabilities, as pointed out by Winter (2003) and Helfat & Winter (2011). For him, it would be a “very narrow” definition of what operational capabilities would be.

⁴⁵ In fact, in his papers since then Teece seems to wobble around considering or not first-order dynamic capabilities as ordinary capabilities.

⁴⁶ As modelled by Ghemawat, 1991.

5.2. First and Second-order Dynamic Capabilities

Regarding the crucial distinction between First and Second order Dynamic Capabilities, we disagree with Teece (2014b) and side with Peteraf and Tsoukas (2017), when they insist that preserving a clear distinction between first and second-order dynamic capabilities would be more adherent to the way of companies and corporations evolve.

From our Schumpeterian competition perspective, broadly speaking, first-order dynamic capabilities would be necessary to deal with the dynamic stability associated with the dominance of 'incremental dynamism' and small changes in its resource base; and second-order dynamic capabilities would be vital in renewing the corporation's resource base, and changing the competitive environment, associated with promoting or dealing with prospective or actual 'transformative moments'.

From that perspective, ordinary or operational capabilities refer to the regular functioning of the firm in relation to its markets, and they certainly include dimensions of flexibility (as in the flexibility in volume and scope of production in the Toyota Production System, when well implemented); constant incremental efficiency gains (as in the 'continuous improvement' (*kaizen*) promoted by the Company-Wide Quality Control approach); agility (as in software firms that achieve mastery in operating with agile methods to daily improve their products), or reliability (as in service providers that manage to vary successfully their procedures in the face of specific difficulties in their operations for specific clients), in all cases achieved efficiently (i.e., at competitive costs). They may support situations of competitive success. As Teece himself observes: "When the firm's output is tuned to what the market desires, strong ordinary capabilities may be sufficient for a competitive advantage, but only until conditions change." (2014b:331). We couldn't agree more.

Following this line of reasoning, firms' strategic learning capacities would be associated with first-order dynamic capabilities, and these were, as we read it, the object of the considerations by Helfat & Winter (2011). The regular release of new product generation, the steady building of alliances with complementors, suppliers, or distribution channels, or the recurrent acquisition of new businesses closely related to the firm's business model, would also be first-order dynamic capabilities (as they are related to changing the resource base of the firm).

It is important to note that we are not defining the nature of the capability in terms of the situation of the ecosystem's dynamics. The ecosystem may be changing in such a dramatic way that the firm cannot react to it only with first-order dynamic capabilities, as Peteraf and Tsoukas (2017) register for the Rubbermaid case, as analyzed in Helfat et al (2007: chap.4), a case referred earlier in this manuscript; or when a sequence of incremental innovations by a given agent, a complementor in the firm ecosystem, practicing its first-order dynamic capabilities, may precipitate the (radical) transformation of ecosystem value architecture (Adner, 2021). A transformation that, eventually, not even the firm that originated it can react to

successfully, as it does not have the second-order dynamic capabilities necessary to overcome the challenges of the new reality⁴⁷.

The ability to learn to refine the process of building alliances (Schilke, 2014), the acquisition process of new businesses in markets other than the firm's original one (Collins and Anand, 2020), the transformation process of the firm's business model to face Amazon's competitive threat in its core market (Denning, 2018) or the ability to redefine the value proposition architecture and conduct the purposeful restructuring of the firm's ecosystem (Adner, 2021), would be second-order dynamic capabilities. It is worth noting that having second-order dynamic capabilities is not a guarantee of success; as well observed by Teece (2014b), it also depends on a good strategy and on having appropriate VRIN resources.

The risk of a conceptualization like the one that Teece adopts in the 2014 papers resides in displacing the concept of dynamic capabilities from a higher-order capability, in the sense that they act upon and change lower-order capabilities, to come to be understood as a general higher-level capability, or one that simply enables a capacity for change (Peteraf and Tsoukas, 2017:16-17).

On our part, we understand that this did not happen, given the numerous examples and references brought by Teece (2014b). The risk exists, but it seems to have been mitigated, particularly by the distinction between the VRIN resource base, the strategy, and the company's capabilities. But we insist that contrary to what is represented in Figure 1, operational (ordinary) capabilities can be qualified as being VRIN in certain competitive contexts (a fact recognized by Teece (2014b:331; 342: ftn19)), although the characteristic dynamics of capitalist competition may reduce their differentials over time. Analogously, first-order dynamic capabilities may prove, in certain contexts, increasingly neither rare nor inimitable, after being understood and adapted by other agents of the business ecosystem⁴⁸.

In fact, Teece (2016) assumes, by referring to what Baumol (2002) called 'routinized' and 'independent' innovation, that the DC framework "recognizes not only the entrepreneurial tasks involved in maintaining a competitive pace of so-called routinized innovation but also the need to pursue independent innovation at the same time" (Teece, 2016: 211). Later, however, Teece (2020c), remarks that if "the

⁴⁷ It seems then adequate to highlight here the distinction between the business ecosystem dynamics and the firm dynamic capabilities performance. While the ecosystem may be dynamically stable or radically changing, the firm may be performing incremental or transformative innovations.

The "Strategic Dynamics situations" framework of Burgelman and Grove (2006) describes in abstract terms, though in a more practical language, the same four possible matches between dynamic/stable firm and dynamic/stable competitive environment. For instance, Burgelman and Grove's framework classify the situation when the competitive environment is radically changing, and the firm is at the same time endogenously promoting a transformative innovation, as one of "runaway change".

⁴⁸ For Teece (2016a), second-order DC are intrinsically inimitable. He believes that would be so for even the firm may not itself entirely understand the complex cause and effect relationship that drives its performance – the 'uncertain imitability' as conceptualized by Lippman and Rumelt (1982). As it will be reviewed later in this paper, Colin & Anand (2020) argue that though second-order DC are most of the times inimitable, they might be substitutable, as competitors can mimic by trial and error the structure, processes, and policies of the benchmark company.

sensing/seizing/transforming capabilities are used incrementally to follow an existing trajectory, microfoundations are like ordinary capabilities” (2020c:10).

All in all, it seems that once understood the sources of his concerns and the importance of the issues he intends to highlight, Teece’s ambiguity over differentiating ordinary and first-order dynamic capabilities may be considered, in the end, almost unavoidable steps when a creative thinker is struggling to refine his original framework. The key issue, from our point of view, is the role of the ‘entrepreneurial manager’, an issue conceptualized by Schumpeter early in his writings that ended up fully incorporated by the DC approach.

5.3. Dynamic Capabilities and “Entrepreneurial Manager” Behavior

The focus on contexts undergoing radical transformation, and on what we understand by second-order dynamic capabilities, led Teece (2012, 2014b) to retake the centrality of the entrepreneurial action of management, particularly of the top management team, as an inherent part of such dynamic capabilities. Peteraf and Tsoukas (2017) react, at first, to this proposition, considering that perhaps this is an overshoot by Teece when expanding the construct of dynamic capabilities to include even ad hoc, nonreplicable strategic actions. They question whether Teece is equating the exercise of dynamic capabilities with the exercise of managerial judgment (“doing the right things, at the right time”).

But, in what we understand as evidence of their true intellectual depth, Peteraf and Tsoukas dissect what are the “true core elements” when it comes to capabilities. After recovering the trajectory of the concept, and its limitations, and showing what it would be like to take it to another onto-epistemological template (“conjunctive theorizing”, as explained in Tsoukas, 2019), they return to the considerations by Loasby (1998), who points out that capabilities are in large measure a by-product of past activities, namely they are inferred from what the firm has accomplished in the past and, as such, they indicate potential – what the firm is known to be capable of doing⁴⁹. However, the deployment of capabilities takes place over time, and, as such, it is open-ended. “What matters at any point in time is the range of future activities which [past and present capabilities] make possible” (Loasby,1998:144).

Peteraf and Tsoukas summarize: “In short, our knowledge of capabilities is derived from past performance, while the performance of capabilities takes place in the future and is, therefore, open-ended. This is important because the orientation of capabilities to the future makes them “*a fallible conjecture*” (Loasby,1998:145) – they may or may not be exercised effectively. Superior capabilities as such are not sufficient for giving a firm a competitive advantage. They need to be combined with a firm's “productive

⁴⁹ Peteraf & Tsoukas also refer here to Chia R. and Holt R. (2009) ‘Strategy without Design’, Cambridge: Cambridge University Press, p.172.

opportunities” (Penrose,1995:31; Loasby,1998:145), namely, the firm's capacity to perceive profitable uses to which those capabilities may be put” (2017:21)⁵⁰.

The distinction that Teece (2014b) assumes in his DC framework between strategy and capabilities is in line with the conception of Penrose and Loasby. But there is more to consider if one wants to overcome and bring in the issue of entrepreneurial management actions to the DC framework.

Conceiving a capability as a ‘capacity to perform’ endogenizes change, since performance inserts variability. In an insightful quotation from Bortoft (2012), as quoted by Peteraf and Tsoukas, “From a performative perspective, a capability becomes different from itself while remaining itself” (2017:21). “Routines” are patterns of action, which, although not always repeat the same, are recognizable as such⁵¹. Here, we can't get away from submitting a clear and precise way to phrase those points: capabilities become different over time *because they evolve*.

Peteraf and Tsoukas conclude their critical examination of Teece's integration of *ad hoc* managerial decisions into the concept of dynamic capabilities with the following statement:

“... in a new context, marked by its own contingencies and the needs, desires, and interests of agents, the performance of a capability is not known until it is enacted; the capability may be performed differently in the future. Thus, the possibility of being different belongs to the capability itself. ... Thus, from a performative point of view, the routine nature of a capability does not indicate the reproduction of sameness. Any time a routine is performed, it is not expected for the self-same process to occur. Repetition is a potentially creative process that generates variation. ... In performance what is a manifestation of what can potentially be? Considering the above, the distinction between dynamic capabilities being routine versus being *ad hoc* disappears. A dynamic capability can have elements of both, and it is the task of empirical research to explore how they are interwoven” (2017:22).

On that account, a first-order capability handles first-order changes to operational capabilities (e.g., launching new products); while second-order capabilities deal, by definition, with higher level transformations (e.g., changing the way you design new products; designing radical new product platforms;

⁵⁰ In other words, to craft a good strategy.

⁵¹ A similar understanding may be found in the Design Science Research methodological literature about designing and implementing management systems. Van Aken et al. (2007) and Van Aken & Berends (2018), for instance, remark that the designing process of a managerial architecture for a complex social system such as a firm's organization comprehends a first and a second redesigns, where the first is the design coming from the present reality of the organization and of the collective work of studying and adapting the current state of art for the solution to surpass the given competitive challenge (this is why it is a first *re*-design; it never comes from nowhere). Later, as the design becomes a reality, the organization and its personnel tend to appropriate it in a very idiosyncratic way, developing what they call the ‘second redesign’, the solution that is effectively put into place, and that typically brings up creative local and integrative arrangements. Such second redesign tend to be the stable pattern through which the organization functions. But it always remains a “fallible conjecture” if it will work recursively like that, since we are talking about a complex human endeavor happening in a complex world, a Von Foerster nontrivial machine, where stability is an accomplishment, not a given (Tsoukas, 2019: ch.16).

seizing new 'productive opportunities'). In these, somewhat structured activities in the organization (e.g., exploration of new technologies and products; conception and experimentation of new business models; conducting the implementation of a new business) are combined with senior management decisions to promote second-order changes.

For Peteraf and Tsoukas, "From a performative point of view, there is no opposition between a dynamic capability being patterned and routine on the one hand and being sui generis and idiosyncratic on the other, once we realize that the latter, as a possibility, is always enfolded in the former" (2017:23).

Their conclusion preserves the essence of the challenge that Teece's renewed DC framework intends to face: at a time when global capitalism is undergoing major changes, how to conceptually establish 'how does the firm function in terms of ensuring long-term cash flow generation in such a changing world?'

Moving forward, the agenda turns to investigate how to design governance mechanisms, management policies, and corporate ecosystems capable of sustaining first- and second-order capabilities, recognizing the trade-offs inherent in the design decisions in question.

As we conceive it, the DC framework takes the form of Figure 2, a theoretically rekindled version of Teece's recent proposition (2014b; and 2014a, 2016, 2017, 2019).

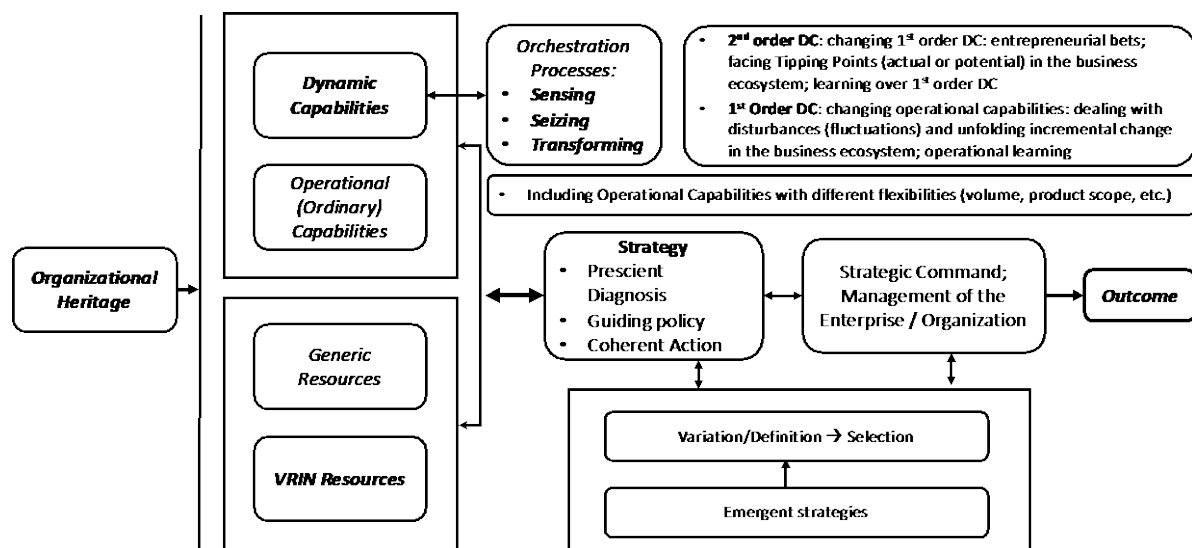


Figure 2: Our proposition: a rekindled DC framework since Teece's (as in Figure 1), assuming a firm facing what we understand as Schumpeterian competition under the creative destruction paradigm.

Summing up, we take the DC framework as a powerful representation of the "dynamic firm", i.e., an enterprise devoted to innovating and successfully evolving through a changing and uncertain environment. We found nothing in the literature to rival it. And for that, we praise all the scholars that strived for its development, particularly David Teece.

Our theoretical rekindling of the framework aims to embed it in the Schumpeterian competition's landscape, and under the umbrella of the creative-destruction paradigm where, we suggest, it's where it truly belongs. In this sense, we take the rekindled Dynamic Capabilities framework as the essence of the "Schumpeterian Corporation". As the analytical lenses that empower corporations to craft strategies and build organizational structures which allow them to survive and prosper under the "iron cage of creative destruction".

6. Schumpeterian Competition, Dynamic Capabilities, and the "Schumpeterian Corporation"

6.1. Competition and the Corporation

With our reframing of the DC framework as proposed in Figure 2, a question naturally arises: what would be the firm's 'Capability Strategy' (Pisano, 2015; 2017)? That is, what set of capabilities the firm should consciously pursue to successfully compete?

The literature on the DC framework has long identified, as already mentioned, that their development entails significant sunk costs (Winter, 2003). The systematic development and maintenance of DC demand a relevant commitment to the organization's time, financial resources, and efforts. DC does not by itself provide competitive differentials in the competition process itself; the relevant capabilities here are the operational capabilities that deliver products and associated services generated by the firm (Winter, 2003; Zahar et al., 2006).

Furthermore, the role of DCs can be to ensure the robustness of these capabilities, through first order DCs (Helfat & Winter, 2011; Collins & Anand, 2020); or to be preparing and conducting major strategic moves, with investment in second-order DC (Pisano, 2015; 2017; Collins & Anand, 2020; Schilke, 2014)⁵². In this second case, the firm may be facing what D'Aveni (1994) called "hypercompetition" and Teece (2012) the "next-generation competition", referring to the idea of traditional industry boundaries becoming increasingly irrelevant as broader business ecosystems emerge, and competitors continually shift their boundaries and partnerships⁵³.

⁵² This characterization of the firm's competitive situation in terms of its economic-financial performance vis a vis its Dynamic Capabilities performance clearly points to the need for the DC framework to be somehow associated with issues of the firm's financial strategy. This research agenda will be pointed out later in the text.

⁵³ McGrath (2013) points to the need for strategic management to consider the "Competitive Arena" in which the firm finds itself, which far transcends its 'sector'. McGrath (2019) in turn advocates that a critical (in our view, dynamic) capability of the contemporary firm is "to see around corners" – i.e., sensing and sensemaking of the coming future. In fact, the challenge is to uncover the 'unknown unknowns' as possible, trying to mitigate the uncertainty the firm faces; and, also, to recognize, through the adoption of proper methodological lens (or adequate 'cognitive artifacts'), the "unknown knowns" – the things that are there to be seen, are being seen, but the firm's management does not recognize them as relevant for the firm's competitive future (Adner, 2021). Here the role of the 'autonomous strategic initiatives' highlighted in Burgelman (1983) model might prove essential for the change in the perception of the strategic context by the firm's top management team.

In these environments, it should be clear that DCs are not the “holy grail” of strategic management (Helfat & Peteraf, 2009), ensuring perennial competitive superiority. A Schumpeterian competition perspective highlights in fact that, by definition, this aspiration cannot be achieved.

Summing up, the “Schumpeterian Corporation” may be defined then as an established multi-business firm with the resources to strategically *sense* the environment beyond the current “common knowledge” in the industry, *seize* the opportunities ahead by investing and developing incremental and radical-transformative innovations, and *transform* itself by thriving in new competitive environments, or even creating them. Hence, focusing on competition and corporations through the lenses of the DC framework fits hand-in-glove with Schumpeter’s creative destruction paradigm⁵⁴.

6.2. Corporate Strategic Choices and Dynamic Capabilities: The inherent trade-offs

In their analysis of the Danaher case, a highly successful North American conglomerate, Collis & Anand (2020) discussed the trade-offs inherent in prioritizing investments in DC⁵⁵. Although they refer to the DC framework proposed by Teece et al. (1997), which they understand as being focused on entrepreneurial movements⁵⁶, the authors use the definitions that Collis (1994) had proposed for DCs of different orders, and underline the success of the first-order DCs of the Danaher Business System (DBS), in ensuring its operational effectiveness (Porter, 1996) over time; and its second-order DCs, by ensuring the evolution of DBS, incorporating successive layers of management tools; and by refining its approaches to M&A, diversifying its acquisitions and penetrating increasingly promising sectors⁵⁷.

Two particularly interesting points stand out in the study by Collis & Anand (2020). The first, as already noted earlier in this essay, is that a DC may not meet the VRIN criteria; even if they cannot be perfectly imitated, other companies can mimic a critical DC in their own way and, so to speak, replace them.

The profile of the DCs of a company, in turn, embeds, as seen, strategic choices, and the target set must be established in a competitively conscious way, for the present situation, and for the expected future as far

⁵⁴ Either for self-renewing when facing a (potential) disruptive threat, or for disrupting itself the business ecosystem where it thrives. This does not mean, of course, that the DC framework is to be considered only applicable on the case of Corporations. The perspective for developing a capability perspective of the firm aims at all kinds of enterprise.

⁵⁵ Although less diversified, the trajectory of AMBEV/INBEV/ABI (beer industry), and of the Gerdau group (steel industry), both originally local Brazilian companies, now multinationals corporations, provide interesting analogies with the case of Danaher.

⁵⁶ In terms of first-order DC, TPS 1997 would refer to movements associated with the evolution of the firm's fit “with the external landscape and upgrades its portfolio of businesses and resources” (Collis & Anand, 2020:7). Seizing new opportunities would mostly be related to second-order DC – “which could perhaps be understood as somewhat 'routinized' in the form of IDEO's new product development skills that continually search out new ideas, or [embedded] in a culture of strategic challenge and debate, as at Intel and IBM, which forces management to continually examine their strategic assumptions and direction” (2020:7). The categorization by Collis & Anand is consistent with the one considered in the DC framework set out in this text.

⁵⁷ A similar approach may be found in Schilke (2014), where alliance management capability is conceptualized as a first-order DC, while ‘alliance management learning’ is the study’s focal second-order DC. Schilke (2014) also analyses the trade-offs between investing in first and second order DC.

as possible, given the uncertainty the firm faces. The point in need of underlining is that neglecting operational capabilities and first-order DC while developing second-order DC is likely to jeopardize advantages accruing from the pursuit of new strategic positionings since these new positionings will not be sustainable without strong operational and first-order dynamic capabilities to support them. Therefore, orchestrating the capabilities to be developed will always be a challenge for Senior Management. Trade-offs will emerge, strategic choices will have to be made, and crucial decisions will have to be taken. The future outcomes will be, always, uncertain.

The second point refers to the ultimate question that Collis & Anand pose: would it be worth trying to develop a capability to radically renew the DBS and its mechanisms of incremental evolution – that is, to develop an entirely new variety of DBS?

In response, they argue that this new “third-order DC” would be something “perilously close to a theoretical nirvana where a firm develops the best capability of all” (Collis & Anand, 2020:21). In one phrase: the ability to always deploy a “radical competitive advantage”. We agree with Collis & Anand: the long-term challenge for a firm to remain competitive over time involves making a set of choices that need to be strongly aligned with the firm's other choices (i.e., its strategy needs to be consistent and coherent), and it “embodies trade-offs that imply that investments in any dynamic capability may be inconsistent with acquiring new ones”. As a result, the likelihood that DC yield such strategic nirvana is “unlikely, if not impossible” (2020:21).

6.3. Towards an integrated theory of Schumpeterian Competition and the ‘Schumpeterian Corporation’: Challenges Ahead

When the evolution of the DC framework is placed under an effectively Schumpeterian perspective, we suggest it acquires an enhanced power. Schumpeter’s radical departure performed in CSD is totally convergent with the DC framework. But it took time for that convergence to take place. It emerged incrementally, in the successive revisions of the framework. In fact, one may say that the DC framework is the instance where Strategic Management acquires the ability to intertwine with Schumpeter's work and complement the creative destruction paradigm. However, it can only accomplish these tasks after a rekindling operation. It wasn’t conceived within a fully Schumpeterian theoretical perspective and, therefore, did not integrate corporate strategies with the dynamics of Schumpeterian competition.

In this paper, we sought to establish this link, by situating the DC framework as a proper building block for a Schumpeterian theory of the corporation, within the landscape of Schumpeterian competition. This effort, however, is still incomplete, if one envisions putting together a truly robust theory of the Schumpeterian Corporation. The creative destruction paradigm itself highlights, in fact, two additional, and key, dimensions that need further exploration by an analytical perspective geared toward such a theory.

One is the financial dimension of the Corporation and its relationship with the DC approach. There is no doubt that there is a critical, and perhaps growing, role for financial strategies in providing conditions for asset orchestration by corporations. Access to credit (on a global financial landscape), strategic debt-liabilities-leverage management, timely liquidity provisions, and financial innovations are, just to name the most critical, key sources of finance-centered dynamic capabilities in the realm of corporate evolution. None of those are explicitly discussed within the DC framework. From our perspective, this is a flaw, and not a minor one: credit and debt are crucial dimensions of Schumpeter's theory of economic evolution⁵⁸, financial fragilization is a frequent outcome of Schumpeter's "second wave", associated with innovation diffusion, and the money market is understood as "the headquarter of capitalism"⁵⁹.

Consequently, the fundamental question that emerges is this: should the financial dimension be taken as a key dimension of the range of dynamic capabilities, necessarily enmeshed within the others, and, if so, compulsorily incorporated by the framework? Or it could be taken in 'parallel' with, but separated from, the other categories and, therefore, discussed as a specific analytical realm? We are inclined to see it as essential to the repository of dynamic capabilities, as practiced by the firm, particularly in terms of enabling "seizing" and "transforming" movements within the scope of its corporate strategy. In any case, serious theoretical work is needed in this direction.

The second dimension which demands analytical exploration by the dynamic capabilities approach springs not only from the creative destruction paradigm but from the study of capitalism's history. It refers to the role of the State in shaping both the competitive landscape and providing the seeds of the corporations' dynamic capabilities. Recent, and not-so-recent, literature has shown the critical role of the state in providing funding, technology, and organizational capacity for American, European, and Asian Corporations⁶⁰.

From Charles Montagu sponsoring the Bank of England to Colbert's France to Alexander Hamilton's Statecraft and industrial policy prescriptions to F. List's advocacy for state-sponsored industrialization in Germany; the State was a prominent agent of economic and corporate evolution. The Asian "Developmental State" cemented this fact, by providing evidence of its accomplishments as an essential tool for producing funding, forging resources, and capabilities, and deploying strategic guidance for Asian Corporations. The State-Corporate nexus and co-evolution were, and are, the linchpin of East Asia's stunning competitive success in the last five decades. This "State-backed dynamic capabilities perspective"

⁵⁸ And of capitalism's history.

⁵⁹ Schumpeter: 1983 (1934):133.

⁶⁰Amsden: 1992, Bensel: 1990, Brewer: 1990, Block and Keller: 2011, Bonvillian: 2009, Burlamaqui: 1995, 2019, Johnson: 1982, Lazonick: 2008, Mazzucato: 2013, Mc Craw: 2012, Reinert: 1999,2007, Wade: 1990, Weiss:1998, 2014. Zhou, Y., Lazonick, W. and Sun, Y: 2016.

must be incorporated if the DC approach aims to transcend the “Corporations only” focus to which it devoted itself, so far.

Therefore, we reinforce the proposition of the State as a key agent in shaping the dynamics of Schumpeterian competition, as well as backing the innovative potential and enhancing the capabilities of the Schumpeterian corporation. In one sentence: Public institutions and policies can nurture the development of first and second order dynamic capabilities by companies, and even sectors. The clearest example of these developments resides in China: The Chinese Entrepreneurial State is second to none in this arena.

6.4. Concluding remarks: China’s ascension, the Creative Destruction paradigm, and Dynamic Capabilities

Burlamaqui’s (2019b) discussion of the linkages among Schumpeter’s ideas, the Entrepreneurial State, and China’s ascension, along with Teece’s propositions (2020a) when considering the rise of China as an economic powerhouse, provide clear evidence that the field of Strategic Management demands theoretical reexamination. However, unlike what Teece sketched, we do not intend to recombine the strategic analysis tools that exist in the discipline; we believe that the existing analytical framework must be extended beyond its current perimeter.

In the case of China’s dazzling rise, the absence in the DC framework, and in Strategic Management in general, of a conceptual approach to deal with the role of the State, and with public policies designed for the very process of promoting and enhancing corporate strategies, stands out. The discipline also lacks a theoretical understanding of how State actions and policies influence the corporation’s resource base, and even more critically, their dynamic capabilities. That makes it hard for the DC approach, the digestion, and proper understanding of the nature and swift evolution of what are now Chinese Corporate behemoths.

While the State as an entrepreneurial agent could be simply assumed as a facet among others of the competitive environment in other historical contexts (even if this was empirically a wrong assumption in a vast number of industries), the experience of East Asia, and especially of the last 40 years of accelerated and spectacularly successful development in China, points out that State actions and policies must be assumed as a critical input and driver of corporate’ strategies, their evolution and future potential.

The Chinese case displays a State that always acted with the aim of co-creating, sustaining, and accelerating Chinese companies’ dynamic capabilities, which in turn showed an impressive and competent entrepreneurial spirit amid cut-throat competition in a plethora of industries and markets. It is true that the size of the Chinese market and its growth potential have been fundamental in this process, together with its export drive as promoted, again, by the government, by offering multiple opportunities for companies of all profiles and value propositions. But it is in the virtuous combination of coordination, support,

competition and innovation between the State and companies that one will find one of the main engines that drove the accelerated development of Chinese Corporations witnessed in the last 25 years.

It is important to mention that, by highlighting the dynamic capabilities necessary for competitive performance in highly competitive and dynamic industries, the DC framework allows for a penetrating angle to start that required revision. But it is not enough. The evolution of the dynamic capabilities of Chinese corporations is inseparable of the evolution of the Chinese Entrepreneurial State.

A key issue still to be considered from the point of view of the DC framework is then how the Chinese State has been evolving, changing, and engaging with both the competitive process, and with corporations, to accelerate the transformation of the Chinese economy and society? It seems evident to a keen observer that the Chinese State, acting as the “quintessential entrepreneurial state” has developed dynamic first- and second-order capabilities throughout its recent history, not only in the sense of redefining public policies, some in radical ways; but also to redesign the very structure of the State and its mechanisms of action, in a process of “2nd order transformation” that cannot fail to surprise the traditional analyst.

Summing up: the Chinese Entrepreneurial State seems to have become an expert in shaping competition, provisioning the corporate resource-base, and in policy and regulatory restructuring. That is an entirely new departing point.

We conclude by restating our conviction that a rekindled DC framework will contribute significantly to the analysis of both Western “big tech new monopolies” and the Chinese State-business strategic, and evolving, nexus. Additionally, it constitutes a key input for the advancement of the creative destruction paradigm.

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TEXTOS DE DISCUSSÃO
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