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Competition in Knowledge Ecosystems: A Theory Elaboration Approach Using a Case Study

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Abstract: This paper explores how competition works in knowledge ecosystems, using a theory elaboration approach. With little research conducted in this area to date, three strategic streams of thought—resource-advantage theory, dynamic capabilities framework, and adaptive marketing capabilities perspective—are compared as a departing point and a frame of reference regarding the dynamics of competition. The streams of strategic thought all converge around the notion that organizations must constantly renew themselves to adapt and align to a fast-changing marketplace. The characteristics of knowledge ecosystems are conceptualized, whereafter an in-depth case study is presented to empirically assess competition in knowledge ecosystems, focusing on the perspective of a keystone actor. At the ecosystem-level, knowledge ecosystems primarily expose and explore knowledge, indicating that they mostly operate in a pre-competitive state. The time needed and the limited control inherent to knowledge exploration translate into the keystone actor focusing on transient rather than sustainable competitive advantage. Knowledge ecosystems further prove to be central in the coevolution and the growth of other ecosystems through connecting and sharing of the explored knowledge base with other ecosystem actors who, in turn, exploit this knowledge common for commercial purposes and innovation.

Keywords: competition; knowledge ecosystems; strategy; resource-advantage theory; dynamic capabilities; adaptive marketing capabilities; theory elaboration

1. Introduction

The industrial marketing discipline has seen a renewed interest in the prominence of strategic thought in recent years [1–5]. A dynamic and hypercompetitive global economy, technological advances, unpredictable customers and competitors, and blurring industry boundaries [2,6] have compelled scholars and practitioners to take stock and reevaluate strategic imperatives. This strategic reassessment coincides with a changing perspective on the dynamics of competition. With accelerated competitive changes, a firm’s ability to understand, anticipate, and adapt is key to its sustainable success [7]. As it becomes increasingly difficult for individual firms to identify and respond to external competitive challenges and changes independently [6], new organizational perspectives have been proposed to thrive in the presence of these forces [7]. “Ecosystems”, as a metaphor to describe the organization of interdependent actors (e.g., customers, suppliers, competitors) that collectively create value and seize growth and innovation opportunities, have increasingly received attention in industrial marketing literature [3,8–12].

One such particular ecosystem, the knowledge ecosystem, emphasizes cognitive coalignment structures [13]. Knowledge is deemed a central and strategic asset in developing a competitive edge [14–16], and knowledge ecosystems underscore the participatory process among ecosystem actors

to create, explore, and use a shared knowledge base for the benefit of all actors [17]. Participation in the ecosystem also enables actors to purpose the primary acquired knowledge into new knowledge for commercialization of products or services or as a means to discover new business models or processes that they would not have been able to do if only relying on individual competences [18]. Despite the burgeoning interest in knowledge ecosystems as engines for growth and value creation [17], how competition works in this complex system of interdependent entities remains a black box in industrial marketing literature [8,13,19,20].

Recent calls have been made to deepen the theoretical understanding and the strategic orientation in these ecosystems to assess its pertinence to marketing and sustainable enterprise development. These calls consider whether ecosystems follow an externally-focused or internally-focused strategic approach [6] as well as the relative importance of dynamic, responsive, or adaptive capabilities in converting knowledge-related insights into value-creating advantage [21]. With a marked reprioritization of marketing strategy on the academic agenda [2] and the emergence of knowledge ecosystems as vehicles for knowledge-creating advantage with which to navigate a complex and competitive marketplace [17], this paper explores how competition works in knowledge ecosystems.

With very little research conducted in this area to date [13], this paper follows a theory elaboration approach, which entails “specifying constructs, relations, and processes at the conceptual level and assessing the fit of those relations empirically” [22] (p. 1146). The objectives of this paper are threefold. First, three streams of strategic thought that grapple with the fast-changing contemporary competitive landscape are reviewed. These are the resource-advantage (R-A) theory [23], the dynamic capabilities (DCs) framework [24], and the adaptive marketing capabilities (AMCs) perspective [4,25]. These streams of strategy converge around the notion that, “in today’s dynamic, hypercompetitive, global economy, strategy must focus on firms’ constantly renewing themselves in the marketplace” [2] (p. 129). The purpose of the review is to use these strategy streams and their associated perspectives as a foundation and a frame of reference to explore the dynamics of competition. Second, the concept and the characteristics of knowledge ecosystems are conceptualized. Finally, a case study of a knowledge ecosystem is presented, which empirically assesses how competition works in knowledge ecosystems, focusing on the perspective of a keystone actor.

The rest of this paper is structured as follows. An overview of the three articulated strategy streams of thought is presented, followed by an explication of the knowledge ecosystem concept, focusing in particular on its characteristics. Using the knowledge ecosystem characteristics as a guideline, the case study is presented thereafter. A discussion of the case follows, grounded by theoretical dimensions as deduced from the three respective strategy streams’ fundamental perspectives regarding competition. The paper concludes by highlighting implications for both theory and practice; limitations are then noted and areas for future research indicated.

2. A Theoretical Perspective on Strategy and Competition

Theories of strategy are inherently embedded in a theoretical assumption of how competition works [2]. In turn, theories of competition “are housed within disciplinary research traditions, which, in a reflexive manner, influence and constrain the content of their respective theories of competition” [2] (p. 130). As a discipline that focuses on competitive implications and firm performance, industrial marketing is well-positioned to contribute to the discourse relating to the dynamics of competition, incorporating both resource- and capability-based theories [26]. In a recent review of different streams of strategic thought, reference [2] (p. 129) posed a central question, asking, “if strategy should be dynamic, which theoretical approaches contribute to developing dynamic business and marketing strategy?”

Connected in a shared belief that the current competitive landscape requires strategies that focus on the constant renewal of the firm, three specific schools of strategy are proposed as lenses through which to examine this dynamic. They are the R-A theory [23], the DCs framework [24], and the AMCs perspective [4,25]. The foundational premises of these three strategic streams are discussed next to

highlight their theoretical commonalities and differences, which provides a foundation from which to assess the dynamics of competition from an ecosystem perspective.

2.1. The R-A Theory

The R-A theory, also known as the theory of competition [23], incorporates the resource-based view of the firm to contribute to our understanding of firm diversity and explains the competitive dynamism in market-based economies [27]. It underlines that the nature of competition cannot be explained by marketplace value only, but instead, resources become valuable once it contributes to the ability of a firm to produce a marketplace offering of value to a particular market or segment [28]. The R-A theory contends that the competences of the firm consist of distinct but basic resource bundles that are “socially complex, interconnected, combinations of tangible basic resources (e.g., specific machinery) and intangible basic resources (e.g., specific organizational policies and procedures and skills and knowledge of specific employees) that fit coherently together in a synergistic manner” [29] (p. 144).

From an R-A theory perspective, competition is dynamic and disequilibrium provoking. In the context of reactive innovation, for example, firms can leapfrog competitors to offer superior returns, shape their environment, and renew society—thus employing renewal competences [23]. Renewal competences enable firms to proactively innovate based on anticipated market needs or demands. The firm then conceives potential attractive market offerings to address the anticipated market demands and develop, create, or acquire resources to produce these envisioned market offerings [29]. Renewal competences thus contribute to making R-A competition dynamic, as motivated by superior financial performance [29].

2.2. The DCs Framework

Defined as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” [24] (p. 516), the DCs framework follows a systematic approach to identify sources of sustainable competitive advantage. It encompasses the organization, its strategy, as well as the business environment [30]. Generally considered to be built on the foundations of the resource-based view (RBV) of the firm, reference [24] explicitly differentiates DCs from the static orientation of the RBV [31]. The RBV focuses on current resources and operational capabilities, whereas DCs emphasize the meaningful improvement and the adaptation of resources. In the pursuit of continuous competitive advantage and sustainable enterprise development, DCs provide a means through which to renew and reconfigure the assets and the capabilities of an organization or ecosystem, particularly in the face of a changing environment [32,33].

DCs highlight three primary capability clusters crucial to organizational survival when customers, competitors, and technologies change. These capabilities relate to sensing opportunities regarding changing customer needs, seizing value by developing solutions that would address these needs, and finally transforming the firm by leveraging resources to bring about change through continuous renewal [30]. DCs analysis thus iteratively seeks to identify opportunities or threats in the market and proceeds to internally develop potential hypotheses to address these opportunities or threats [1]. DCs should be regarded as a set of “deeply embedded” and repeatable skills and knowledge enacted through systematic processes [4] (p. 27). Although strategy is part of the DCs framework, it is analytically separate from capabilities [30]. The role of DCs is to provide input and then assist in enacting the strategy [30].

2.3. The AMCs Perspective

The third strategic stream relates to AMCs [25,34,35]. AMCs emphasize the ability of a firm to identify and capitalize on emerging market opportunities [36]. Similar to DCs, AMCs propose three adaptive capabilities that enable firms to swiftly adjust to fast-changing markets. These are vigilant market learning, adaptive experimentation, and open marketing that mobilizes dispersed and flexible partner resources [37]. AMCs enable organizations to rapidly adapt to a changing competitive

environment by (1) improving their risk coping capabilities through constant market learning to cultivate market discrimination; (2) continuously deepening their market observations by making use of marketing experiments; and (3) collaborating and building relationships with partners that are sensitive to changes in the market [4].

According to reference [4] (p. 27), contemporary strategy formulation requires a “nuanced approach to resource-based theories”, which adopts an outside-in approach to strategy, looking “first to the market” by means of adaptive capabilities. Reference [38] arranges capabilities into three spectrum-spanning categories. On the one end, inside-out capabilities focus on the internal capabilities of the firm, which gets activated based on market requirements and competitive challenges. This capability approach is often reactive to changes in the external environment. The other end of the spectrum represents outside-in capabilities, which are customer driven and emphasize exploration [6]. Outside-in strategic approaches start with the market [34] and focus on changes in the external competitive environment to preemptively connect internal capabilities to address market changes [38]. An outside-in approach enhances and augments the DCs of the firm [4] and unlocks a wider set of opportunities for competitive advantage and growth [34]. An outside-in approach proposes that strategic choice is primarily based on using insight about the external environment and converting it into value-creating advantage [21]. In contrast, the inside-out approach prioritizes internal operations, capabilities, and their efficiency within the organization [39]. Lastly, spanning capabilities serve to integrate and bridge the inside-out and the outside-in capabilities on either end of the spectrum.

Summarily, R-A theory thus argues that resources prove valuable to a firm in as much as they can yield competitive differentiation or customer value that enhances performance outcomes [29]. In turn, the DCs framework emphasizes the capabilities of an organization to purposefully reconfigure and adapt its intangible and tangible resources to address a rapidly changing environment [40]. Finally, AMCs underscore that, to swiftly adjust to changing markets, attentive market learning, continuous market experimentation, and partnered-relationships with others “closely attuned to market changes” are necessary [4] (p. 28).

2.4. Strategic Dimensions to Assess Perspectives of Competition

Based on the theoretical underpinnings of the three reviewed strategy streams, four dimensions relating to strategy and its associated foundational perspective of competition is proposed. The four dimensions are: (1) competitive context; (2) market attentiveness; (3) beliefs regarding organizational boundaries; and (4) sustainability of strategic advantage. The dimensions provide important considerations regarding strategic thought impacted by the dynamic external system within which the business or the organization functions and competes [41]. The dimensions also implicitly serve as potential performance indicators [42], as decisions relating to growth and development are closely tied to strategic decisions regarding how and when to react to competitors [43]. An organization’s strategic perspective about how they can achieve and sustain value-creating advantage is similarly affected by their view of competition, as it dictates what the organization allocates resources to, whether tangible or intangible [44]. Built on the reviewed theories, these four dimensions thus offer a comparative basis from which to assess the dynamics of competition within knowledge ecosystems.

2.4.1. The Competitive Context

The environment in which an organization operates determines its context and identity. Organizations are reliant on relationships and related entities, which constitute the embedded interactive environment in which it exists. The context of the organization is enacted, in other words, it is often created by the organization itself [45]. The context encompasses all actors, activities, resources, capabilities, and forces that could be complementary but also competitive to organizational goals. In dynamic environments in particular, the competitive context impacts what strategy is employed and how. As such, an expressed perspective regarding the competitive context is necessary to navigate a rapidly changing set of competitors and competitive forces, including macro-level elements such as

technological change, socioeconomic factors, and changes in laws, regulations, policy, or international conditions. The competitive context of organizations thus reaches wider than just direct and indirect competitors, their value propositions, and resources and capabilities that they possess. It should serve to set the strategic agenda for interactive engagement with all embedded entities that constitute the bigger ecosystem.

2.4.2. Market Attentiveness

Market attentiveness builds on a market orientation view of strategy, which focuses on present as well as potential customers. This dimension entails changes in market demands based on needs, wants, and preferences. It also includes an awareness of market forces that have a bearing on market demand. Market attentiveness requires a deep understanding of the organization's market (present and potential) as well as the organization's competences. To better understand the impact of market attentiveness from an organizational viewpoint, the panarchy concept [46] provides a sustainable development perspective. Panarchy is presented as a theory of change describing human and ecological interactions as adaptive cycles of destruction and reorganization, which provides opportunities for restructuring [47]. Adopting this view, organizations with a high level of market attentiveness would encourage change, build resilience, facilitate sustainability, and encourage diversity. The converse being that a low level of market attentiveness would discourage change and rather focus on "ecosystem restoration", which implies not taking advantage of new opportunities but rather returning to the original ecosystem state or status quo.

2.4.3. Organizational Boundaries

Boundaries from a strategy doctrine perspective refer to resources, capabilities, and activities that the organization perceives it has control over. As reference [48] (p. 32) argues, "the organization ends where its discretion ends and another's begins." This underlines that strategies originate and function under certain constraints [49]. The conventional belief is that hierarchical structures are in partial control of organizational actions or decisions and define the strategic boundaries within which the other actors can respond to unpredictable forces or complex environments and contexts—thus, in effect, where the boundaries of their competition lies. Dynamic organizational contexts, however, entail interactivity across boundaries to allow internal and external resources and relationships to be mobilized to enhance performance, especially when knowledge, as an intangible asset, is being exchanged. Building on the outside-in perspective [25], strategies in a dynamic and competitive environment would consider the bigger ecosystem of interrelated factors and forces and apply a cooperative, collaborative, and growth mindset that is sentient to external trends and shifts.

2.4.4. The Sustainability of Competitive Advantage

The three streams of strategic thought all converge on the notion of continual reconfiguration and renewal to maintain organizational advantage and ensure survival. Growing doubts have been raised by marketing academics regarding the pursuit of sustainable competitive advantage as strategic priority [4]. Extant beliefs around permanent, defensible, and durable advantages are making way for the emerging theme of transient, short-lived, and temporary advantages [50]. The essence of the argument is that advantages are rapidly created and eroded in hypercompetitive market environments [51]. In uncertain times of fierce competition, strategic directives that seek areas of sustainable competitive advantage are becoming less relevant to some organizations [52,53]. Transient advantage provides strategic opportunities to extract the maximum value from short-lived competitive advantages while continually developing diverse and new value-creating advantages [50,52]. Reference [4] (p. 27) proposes that, "in an environment of temporary advantages, firms need to be able to reconfigure continually and renew their advantages, because it is through reconfiguration that assets, people, and capabilities make the transition from one advantage to another". To contextualize the dynamics of competition for this

study, the next section explicates the concept of the knowledge ecosystem, focusing in particular on its organizational characteristics.

2.5. Knowledge Ecosystems

The notion of biological ecosystems as communities of interacting organisms situated in set geographic environments is a familiar concept to most. Originally conceived by the British botanist Arthur Tansley in the 1930s, the term relays the continuous coevolution of organisms that adapt to external changes and disruptions sensed in their environment. During this evolutionary process, the various organisms influence each other (and their environment) as they create, compete, and share resources to survive [54]. In 1986, the sociologist Amos Hawley introduced the ecosystem term into social science, referring to an ecosystem as an “arrangement of mutual dependencies in a population by which the whole operates as a unit and thereby maintains a viable environmental relationship” [55] (p. 26). Not long thereafter, reference [56] noticed growing parallels with the world of commerce and applied the ecosystem concept to an increasingly dynamic and interconnected business environment. Reference [56] proposed that “successful businesses are those that evolve rapidly and effectively. Yet innovative businesses can’t evolve in a vacuum. They must attract resources of all sorts, drawing in capital, partners, suppliers, and customers to create cooperative networks. In a business ecosystem, companies coevolve capabilities around a new innovation: They work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations” (pp. 75–76).

Knowledge ecosystems are defined as a complex, multi-faceted system of interdependent yet heterogeneous knowledge-intensive companies [20,47]. Knowledge ecosystems, however, differ from the initial conception of the business ecosystem as per reference [56] in several ways. Mostly geographically clustered or localized around a specific hot spot [18,20,57], knowledge ecosystems revolve around a keystone actor or anchor tenant. Companies locate in and around these particular geographical hot spots to develop and exchange tacit knowledge [20]. The keystone actor or player is often a university or public research organization [18,58,59]. The main activities of knowledge ecosystems also center on the development and the generation of a shared knowledge base [58], with the focus of this main activity being the collaborative exploration and not the exploitation of knowledge [59]. As knowledge ecosystems focus on a “collective knowledge exchange process” [13] (p. 22), knowledge is thus used as the most important medium of interaction among its actors [60]. The ecosystem-level output is generally research-based knowledge and associated applications, where the ecosystem actors jointly create and explore new knowledge as a shared resource. In this respect, knowledge ecosystems are “organizations comprising diverse actors bound together by a joint search for valuable knowledge while having independent agency also beyond the knowledge ecosystem” [17] (p. 1524).

Based on a review of the literature, four ecosystem factors with accompanying knowledge ecosystem-specific characteristics are highlighted as determinants of strategic choice (Table 1). These factors relate to the ecosystem actors, the nature of their activities, the organizational alignment of actors and activities in the knowledge ecosystem, as well as the ecosystem-level output or artifact.

Table 1. Characteristics of knowledge ecosystems.

Factor	Characteristic	Description
Actors	Network oriented Diverse Connected	<ul style="list-style-type: none"> • Overlapping and hyper networked actors rather than discrete, linear value chains [61,62] • Multiple actors, cospecialized at times, who create, scale, and serve markets in ways that are beyond the capacity of any single organization or individual [19,63] • Embedded ecosystem actors are directly and indirectly connected through their resource-integrating interactions [10,64]

Table 1. Cont.

Factor	Characteristic	Description
Activities	Externally focused Interdependent (Complement/Collaborate) Coopetitive; Cooperative; Competitive	<ul style="list-style-type: none"> • Focused on activities that extend beyond individual company borders [65,66] • Presence of complementarities and interdependencies between actors to create focal value proposition [9,62] • Actors collaboratively co-create among firms, stakeholders, and other complementary ecosystem resources [3,20] • The nature of the interdependence between actors (i.e., cooperative, competitive, or coopetitive), impacts the ecosystem strategy they follow [41,67]
Alignment	Dynamic Emergent Influence based	<ul style="list-style-type: none"> • Ecosystem relationships and capacities coevolve rather than being static [68,69] • Generates and embraces unanticipated shifts, reversals, and unintended consequences [60,67] • Shaped by partial influence rather than full ownership or control of assets and resources [9,70]
Artifact	Exploration	<ul style="list-style-type: none"> • The aim is to collaboratively combine all participants' contributions into a shared knowledge repository [59,63,71,72]

Knowledge ecosystems typically bring together multiple networks and actors from different industries and sizes in order to create, scale, and serve markets in ways that are beyond the capacity of any single organization [59]. The diversity and the collective ability of each member in the ecosystem to learn, adapt, and explore knowledge are key determinants of its survival [18]. To meet increasing market demands and ensure the long-term health of the whole ecosystem, all actors need to collaborate so that all can derive mutual benefit [60]. Interests, goals, and values are aligned for the materialization of a focal value proposition, which, in the case of knowledge ecosystems, is a shared knowledge repository, knowledge base, or knowledge commons [73].

The concurrent presence of complementarities and interdependencies between the diverse set of actors is one of the key characteristics of all ecosystems [62]. This implies dynamic relationships where a responsiveness to change, ranging from the micro- to the macro-level, would impact the performance of not only individual actors but also the community as a whole. Similarly, when coevolving and collaborating with others as a result of the changing environment, the bi-directional influence of actors on the ecosystem and the ecosystem on actors plays a central role [61]. This impacts the ecosystem's dynamic capabilities and also its ability to attain competitive advantage [40]. No pre-defined blueprint exists for knowledge ecosystem management [19], but, rather, the emergence and the evaluation of opportunities to create and capture value necessitate adaptive strategies.

As new ways are forged to compete, knowledge ecosystems lead to the discovery of new knowledge, solutions, or business models to create and capture value. The enhanced connectivity across specialized capabilities and resources enables knowledge ecosystems to develop new, cocreated solutions to address customer needs and societal challenges. Central to this process of value cocreation is an understanding of how competitive advantage is achieved through the interplay of the various actors' dynamic capabilities, the coordination of relational resources, or the implementation of strategic mechanisms inherent to an ecosystems approach.

Little research has been conducted in the area of strategic and competitive dynamics within knowledge ecosystems and, as such, a theory elaboration approach is taken. Following the conceptualization of ecosystem factors and knowledge-ecosystem-specific characteristics, empirical research was conducted [74]. This dual process facilitates discovery rather than validation [22].

3. Research Methods

For the empirical component of the study, qualitative data were collected. The analysis of qualitative data allows a naturalistic, interpretative approach to explore the phenomena in-depth [75]. It also allows the researcher to take perspectives and accounts of the research participants as a starting point for further exploration [76]. The overarching research question focused on how competition works in knowledge ecosystems, and, as such, the research method focused on in-depth interviews with key decision-makers of a keystone actor in a knowledge ecosystem. In-depth interviews allowed the researcher to probe participants' underlying attitudes, beliefs, and motivations on a narrowly defined topic [77] and served to deepen our understanding of the complexities involved [78]. The in-depth interviews further allowed the researcher to reflectively listen to the participants and ask follow-up questions to ensure that their answers were well understood and accurately interpreted.

The research design entailed a single case study to collect rich empirical evidence from this particular contextual knowledge ecosystem, organized around the joint search and sharing of explored knowledge. As a qualitative form of inquiry, case study methodology focuses on a detailed investigation of a particular entity to provide an analysis of both the context and the processes involved [79]. Due to the lack of relevant existing data as well as the complexity of the variables, a detailed case study offered the best method to explore the questions relating to context-specific strategic decision-making and competition [30]. A single case study is most appropriate when the research requires an in-depth, qualitative understanding to provide rich insights into a substantive topic [80]. Previous studies have also pointed to the need for more in-depth case studies at the ecosystem and keystone actor level, to contextualize the strengthening, sustaining, or undermining of competitive advantage [20].

To explore how competition works, the case study focused on the specific knowledge ecosystem context of a university-based strategic marketing research institute, the University of Cape Town Liberty Institute of Strategic Marketing (UCT Liberty ISM or Institute for short), based in Cape Town, South Africa. As the keystone actor in its knowledge ecosystem, the UCT Liberty ISM was selected as an ideal case. It fully aligns with the definition of a knowledge ecosystem, consisting of hierarchically independent yet interdependent heterogeneous participants who advance the translation of research knowledge. Additionally, characteristic of a knowledge ecosystem, the UCT Liberty ISM is a university-based organization, with most of its ecosystem actors consisting of public and private sector partners, brands, government, and other research institutes in and around the same geographic area. The fact that this knowledge ecosystem focuses on strategic marketing further contributes to a more nuanced understanding from an industrial marketing perspective.

The following procedures were followed in terms of data collection. Research interviews were scheduled both with the UCT Liberty ISM head of projects, Dr. James Lappeman, as well as the founding Institute director, Professor John Simpson. Prior to the scheduled interviews, both research participants were sent short research primers via email, relating to the objectives and the main constructs that would be discussed during the interviews. Both participants sent back written replies to the research primers to highlight particular areas they felt they could best contribute towards during the interviews. These responses were used as opening questions for the interviews. Face-to-face interviews were initially scheduled, but, due to lockdown regulations during the COVID-19 pandemic, the interviews were facilitated online via the Zoom platform. Both participants were individually interviewed twice, with the interviews being video and audio recorded as well as fully transcribed to aid the analysis. The first round of interviews lasted approximately 90 min each. The second round of interviews lasted approximately one hour each, serving to clarify any potential misunderstandings following the first interview and providing an opportunity to add any additional information and context. The second round of interviews are indicative of the "linear but iterative process" of case study research [81] (p. 25).

As it is preferable that multiple sources of evidence are used throughout the case study method [81], the research participants also shared additional archival documentation, research reports, and some secondary data, which further aided in assessing the phenomenon in a way that video and audio recordings would not have been able to do. Once all recordings were transcribed, the researcher

shared the full transcripts and the initial analysis with the participants for final clarification of any particular points. For the purposes of this study, a theory elaboration approach was adopted to extend the theory in cases where “pre-existing conceptual ideas or a preliminary model drives the study design” [82] (p. 164) and hence to increase internal validity [83].

All the actors of this knowledge ecosystem knowingly and willingly form part of the ecosystem, with the primary shared goals being to explore knowledge for the purposes of economic or market growth and to stimulate innovation. Important to note is that the pursuit of knowledge exploration includes search, variation, risk-taking, experimentation, and flexibility [84], all elements that have a bearing on strategic orientation and choice and competitiveness. The ecosystem itself consists of approximately 50 members, with the UCT Liberty ISM itself comprising a core group of five permanent staff. The Institute was established in 1999, with the aim of bringing together academics, marketing practitioners and researchers to pursue innovative and meaningful research and, as a result, develop South African-specific marketing theory by the research and the analysis of current marketing theory. Professor John Simpson reflected on the establishment of the Institute as follows:

“Since the inception of the Institute, we have involved the University of Cape Town and other academics, marketing experts and researchers to work on projects and write case studies. Within the first two years we published our first book ‘Marketing in South Africa: Cases and Concepts’, which is now in its fourth edition. All of our 30 plus projects were selected to add to marketing knowledge for both marketers and students. Many were really groundbreaking.”

The UCT Liberty ISM was jointly founded by the University of Cape Town and a large private multinational fast-moving consumer goods company, who contributed a sizable grant to the university’s School of Management Studies. The resources provided by the private company offered substantial advantages in terms of scale and scope during the Institute’s inception and increased the viability of the whole ecosystem during its start-up stage. With regard to ownership, the Institute belongs entirely to the University of Cape Town, which partially safeguards the Institute from market forces. Although fully owned by the University of Cape Town, the university does not financially contribute toward the Institute, and the UCT Liberty ISM functions as a non-profit. The Institute is soft funded by a private company through an anchor sponsorship, with sponsorships and donations being tax deductible. They also receive smaller donations and cover additional expenses with revenue from the research projects that they undertake.

4. Case Study Findings: The UCT Liberty ISM

The case study findings are presented next. The previously identified ecosystem factors are used as a structure to present the results. The knowledge ecosystem characteristics further serve as strategic determinants to explore how competition works. These characteristics relate to the ecosystem actors, the nature of their activities, the organizational alignment of the knowledge ecosystem, as well as the ecosystem-level artifacts or output. Table 2 provides an overview of the findings, with the rest of the section expanding on these results in more detail.

Table 2. Overview of case study findings, based on ecosystem factors and knowledge ecosystem characteristics as strategic determinants of how competition works.

Factor	Characteristic	Strategic Determinants
Actors	Network oriented Diverse Connected	<ul style="list-style-type: none"> Multiple networked actors encompassing two main categories: contributors (exchange, explore, build central knowledge base) and benefit members (exploit knowledge base for further innovation or commercial purposes) Actors are specialized, representing heterogeneous knowledge bases, which contributes to sustained knowledge exploration with potential for broad application Actors are often embedded in other, different ecosystems, e.g., business, innovation, or entrepreneurial ecosystems, which can expedite flow and spillover of knowledge for value-adding advantage
Activities	Externally focused Interdependency Cooperative and cooperative	<ul style="list-style-type: none"> Primarily focused on external knowledge exploration over a 12 to 18-month period for the purposes of commercial knowledge exploitation Vulnerabilities that relate to continuous reliance on external funding and extensive time resources required to fulfill value proposition University-affiliation key interdependency to access resources Keystone actor activities are mainly cooperative among marketing fraternity that they serve; actor activities are at times cooperative to benefit whole ecosystem
Alignment	Dynamic Emergent Influence based	<ul style="list-style-type: none"> Ecosystem relationships and capacities are coevolving and dynamic, although it takes time and intentionality Keystone actor mostly determines direction of the knowledge ecosystem—emergent realignment to environmental changes regarded as important but not mandatory for advantage University-affiliation signals and affirms legitimacy
Artifact	Knowledge exploration	<ul style="list-style-type: none"> Explored knowledge provides broad and general knowledge repository for all ecosystem members to adapt, modify, and exploit for own contexts and purposes—vital for competitiveness

4.1. Actors

The actors that encompass the knowledge ecosystem structure and organization of the UCT Liberty ISM can be divided into two categories. The first category relates to entities, organizations, and individuals that contribute to the exchange, the exploration, and the building of the central knowledge base for shared use (contributors). The second refers to members of the ecosystem who primarily belong to the ecosystem for the purposes of using the shared knowledge base for further innovation, market, or technological development (benefit members). The two categories are not necessarily mutually exclusive, and contributors can become benefit members and vice versa. It is

important to differentiate between the two categories, as each uniquely contributes to the ecosystem. The actors also vary in terms of the roles that they need to fulfill, depending on the research request or the project that the Institute is working on. As Dr. Lappeman stated:

“I think it is built into our DNA. We spend so much time with our partners in the boardrooms and the people who consume our research, who then tell us what they’re dealing with, which gives us a constant flow of ideas, which is where we get hints of what we could do next. Once we get an idea, we look for appropriate partners or constituents within our network, depending on the project. Sometimes an advertising agency, sometimes an individual who has expertise, sometimes a research agency. Our partners are central to the project as their expertise, resources and financial contribution underpin much of the research.”

The legitimacy and the specialization of contributors as well as their networked connections are vital not only for the resources that they contribute toward the sustained exploration of knowledge but also for the heterogeneity of the knowledge bases that they contribute. In turn, the benefit members of the ecosystem are often embedded in other ecosystems as well, be it business, innovation, or entrepreneurial ecosystems, which means that they have the ability to bridge the divide between knowledge “stock” and “flow” [85], which requires “new systems and understanding of the way in which [knowledge] can flow between diverse individuals, teams and organizations” [85] (p. 1290). From a strategic marketing perspective, it also denotes the development of adaptive, agile, and innovative marketing skills [86]. Dr. Lappeman explained it as follows:

“We need to keep reinventing ourselves and find new angles on the consumer landscape. You could have, sitting in the same room, someone from an insurance company, a banker, someone who sells breakfast cereal, advertising agencies, and university staff. You’ll have people from entrepreneurial start-ups and small business incubators. I mean, literally, government institutes are represented as well as apparel companies, the list is very broad. Any organization that in some way has a consumer facing agenda, like tourism, anything that’s got a consumer at the end of their value chain has got some interest in the work that we do. So, we have to keep our studies fairly broad, which is a space that we have in the market that others can’t easily fill.”

In terms of the geographic locality of actors, the Institute historically consisted of actors that were in close proximity to the Institute and heavily relied on face-to-face contact—a model that started to change in 2019 and is now quickly accelerating due to COVID-19.

“We need to prioritize relationships based on where the research expertise and the market demand for projects are, which will entail a lot of travel. Our main focus has been South Africa, but we’ve started working with partners outside of our borders in recent years. We are in constant discussion as to how we evolve our business and research delivery model. We do not want to make geographic proximity a barrier” (Dr. Lappeman).

4.2. Activities

The ecosystem activities that the UCT Liberty ISM gets involved with primarily center on the production of research, which is of benefit to academics, strategic marketers, and researchers in the commercial and the public sectors. As the Institute is privately funded, the research reports and projects that they take on are all externally focused, as Professor Simpson said: “Our primary focus and interest group is industry, so everything we do needs to align with that.” The Institute conducts large-scale research projects on broad market segment topics over a 12 to 18-month period, which would likely be too resource intensive, extensive, and expensive for most research firms to conduct if not pertinently being commissioned by a client to do so.

The research that the Institute conducts requires considerable funding. As such, their business model includes a number of ways to secure funds. As per the inception of the Institute, a long-term anchor sponsor is involved, who also receives joint naming rights. The anchor sponsorship further includes access to all research reports and findings, and they are allowed to include questions to which they alone would see the results. In addition, they receive access to all public workshops and will get in-house presentations of any research output. For ad-hoc research projects that are initiated by the Institute based on an identified market need, potential project partners and funders are identified, of which the funds generated go toward covering the costs of conducting the research and all project-related expenses. Other forms of securing funds include making the research output (new and archived research) available for purchase, paid attendance of public presentations of new research, and paid in-house presentations of the research to individual firms. Research outputs, including reports and case studies, are made available to other academic organizations free of charge. A key differentiator that the Institute prides themselves on is their ability to access and bring a broad range of actors together for the purposes of joint learning.

“We have easy access to a world class professor in Sociology and an economist talking about the middle class and how that is shifting, and it’s very easy for us to build relationships in order to access these specialists. Whereas, for the average marketer or even research agency, they just don’t have that access. And then that access also translates into industry. You know, if I work for Coca-Cola, I call my buddy at Pepsi and ask them what they’re learning. Not only will it be ethically problematic, but you would get into big trouble. But we can go and knock on the door at Pepsi and say: ‘Hey, what are you learning?’; and then knock on the door at Coca-Cola and say: ‘Hey, what are you learning?’ So, because we are affiliated with the university, we have a lot more relationships and access across the industry. And with competing brands. The point is, we can get a window into the practical side of what we are studying that is virtually impossible for a commercial entity to get”

(Dr. Lappeman).

Not only does the Institute leverage their association with the university as a form of signaling, but they also use it to set the agenda in terms of the research output that they deliver. Over the past three years, the Institute has invested time and financial resources into publishing their research in peer-reviewed academic journals as well. Although their primary focus is still industry, they have realized that their university association affords them the opportunity to build further brand equity among potential industry partners. Dr. Lappeman explained it as follows:

“For us to be part of this ecosystem, we need to show that our research is robust and that we have a track record of peer-reviewed publications in international journals, as well as our textbooks—the signaling is definitely there as a subtle heuristic, I guess, in many ways for people to be accepting of our work.”

A distinct tension mentioned was the need to reinvent the Institute and find new ways to address the changing consumer landscape. Opportunities for reinvention and transformation do present themselves, but, as the keystone actor, the Institute tends not to pursue these opportunities as they feel it may distract from their core value proposition and their non-biased appeal among the marketing fraternity.

“There’s a lot of temptation to do smaller projects and kind of more niche projects and that is still on the table. We do get asked by companies to help them at a category level and often we just say that we can’t pigeonhole ourselves to a particular category or type of company”

(Dr. Lappeman).

4.3. Alignment

The UCT Liberty ISM aligns its actors and their activities based on their dynamic and coevolving capabilities as well as with industry demands. The Institute needs to keep pace with what changes they can sense in their external environment, and, in terms of the Institute's establishment, that was its main mandate—to reflect and review a changing consumer market.

“The Institute was established out of recognition that the rapidly changing South African consumer market is unique, bearing only a limited resemblance to consumer behavior in the rest of the world”

(Professor Simpson).

Although a sensitivity to these changes are key to the Institute's long-term sustainability and development, both respondents acknowledge that this dynamic process takes time and intentionality to implement.

“I think we're kind of evolving rather than trying to make big jumps. I think, obviously COVID has put a lot of pressure on, you know, on transformation. Our face-to-face business model and the relationships that we've painstakingly built, are becoming increasingly difficult to push as a value proposition. And so, we're moving more and more to a model where we want the majority of our income to come from just being a member of the Institute—having access to our research library that you can use when you need it, and not to be reliant on whether you can attend a physical presentation, for instance”

(Dr. Lappeman).

As the Institute is university-based but does not independently own any assets, the leveraging of their university association also comes into play when steering the ecosystem actors into a direction regarding the research reports or the projects that they get involved with. It both serves as a form of indemnity and affirmation of independence: “... people expect that because the research is coming out of the university, that there are no hidden agendas” (Dr Lappeman).

4.4. Artifact

Within the ecosystem context, artifacts refer to products and services, inputs and outputs (including tangible and intangible resources) that are jointly created as an ecosystem-level output among all actors [63]. Knowledge ecosystems differ from other ecosystem types in the sense that their artifacts or ecosystem-level output is generally research-based knowledge and associated applications, with reference [17] stating that knowledge ecosystems mostly occur in pre-competitive and pre-commercialization settings. Aligned with most other knowledge ecosystems, the UCT Liberty ISM is focused on the exploration of knowledge [18], with their research being broad and general for firms and other ecosystem member-actors to adapt or modify based on their respective contexts and needs. The exploration of knowledge is central to the sustained existence of the Institute. Dr. Lappeman explained it as follows:

“... there's a little bit of controversy around whether knowledge gets produced or rather just exposed. But that does put a bit of pressure on us—we need to keep producing research that is valuable. The industry will very quickly pick up whether what we're saying is something that they've heard before or whether it's new.”

5. Discussion

Following the theory elaboration approach [74,82], the discussion is centered around the strategic dimensions to assess perspectives on competition, as deduced from the three strategy streams of thought.

5.1. The Competitive Context

As evidenced by the case, the UCT Liberty ISM is acutely aware of their competitor set as well as their changing environment. They maintain a dynamic orientation towards their competitive context, and their ecosystem actors, both contributors and benefit members, reflect a broad and network-oriented range of resources and capabilities from which to draw on. From a resource- and capabilities-based view, their knowledge ecosystem also represents a diverse, heterogeneous, and specialized set of actors, which should serve to heighten their agility to adapt to a fast-changing and dynamic competitive context. The keystone actor in this case, however, only exerts partial influence over its actors, which means that capitalizing on potential value-adding advantages is not as simple as it seems. To safeguard themselves against competitors and threats, the knowledge ecosystem mostly focuses on retaining their turf and leveraging their existing “know how”.

Knowledge ecosystem activities within the UCT Liberty ISM are exclusively externally focused, and complementarities in resources and capabilities are sought in addressing ecosystem output in the form of research. In terms of alignment of actors and activities, the university-association serves as a signaling and influence-leveraging mechanism. Interesting to note is that, although the university does not contribute towards the Institute financially, it does confer scientific and academic legitimacy on the ecosystem, which does prove to be beneficial to the ecosystem as a whole. The university association also levels the playing field in terms of opening up access to collaborations among traditional competing actors, as the joint goal of knowledge exploration stands to benefit all involved.

5.2. Market Attentiveness

As the keystone actor, the UCT Liberty ISM manages a fine balance between panarchy and restoration. Although the participants revealed high levels of market attentiveness by constantly meeting with all ecosystem actors to assess changes in the market, the intricacies of all the stakeholders involved in the ecosystem would render it difficult for them to constantly restructure and reorganize to capitalize on new opportunities. The Institute purposefully does not pursue all potential opportunities and maintains that they intentionally produce broadly-themed research-based knowledge output to ensure their survival. This perspective resembles an R-A based approach, wherein the resources of the knowledge ecosystem only have value in as much as they contribute to enhance performance outcomes, which, in this case, would be retaining existing actors and benefit members of the ecosystem.

A potentially too narrowly focused strategic approach to service primarily the marketing research fraternity could additionally be perceived as representing a static view of their market and competitive context. As they increasingly start to employ technology to bridge the geographic boundaries of their actor and market base, one expects that their reach and the range of their activities will concomitantly be broadened. This, in turn, would open up new segments over time, necessitating strategic dynamism. Characteristically inherent to knowledge ecosystems is the fact that their focal ecosystem-level output, knowledge, takes time to explore or expose. This creates a potential weakness in not being able to promptly seize disruptive market changes.

An outside-in approach requires anticipation, adaptation, and alignment to the market [5]. The fact that the Institute’s business model has not changed much over the past 20 years indicates that, although there is attentiveness and anticipation of changes in the market, adapting to transform and align with the identified opportunities or threats is a difficult task to accomplish. This could be ascribed to the relatively small size of the keystone actor team and emphasizes the importance of actor interdependence and relationship strength to grow an ecosystem in scope and size. In addition, and perhaps linked, the actor activities, although network oriented, are not entirely interdependent in terms of the survival of the ecosystem. As such, barring the small core staff complement of the Institute, the other ecosystem actors are not overtly incentivized to contribute to long-term sustainability and development of the knowledge ecosystem.

5.3. Organizational Boundaries

The knowledge ecosystem implies a hyper networked context where relationships constitute the most valuable resources, which is also evidenced in this particular case. Relationships with ecosystem actors contribute towards resources, capabilities, and activities that are mobilized for knowledge exploitation. As an extension, access to the networks of actors situated in other ecosystems contribute to potential resources and capabilities to complement that of the ecosystem or the keystone actor, which can, in turn, enhance performance [45]. Additionally, both research participants reiterated that the Institute needs to add value and have a compelling value proposition to constituents, which underscores that they put a premium on being relevant to all stakeholders, internal and external. The artifact of the ecosystem is primarily exploratory in nature, which means that the exploitation of the explored knowledge mostly happens outside of the boundaries of the knowledge ecosystem.

This iterative process of external resource and capability exchange, combined with constant pursuit of producing research that is valuable, points to a primarily outside-in approach. Resource exchange is, however, dependent on the relative efficiency of the internal resources to adapt and extract the necessary insights, and, as such, spanning capabilities also play an important role in this knowledge ecosystem. The Institute, however, has full autonomy over the strategic direction of the knowledge ecosystem, and all the other actors follow their lead in terms of strategic choices and activities, reaffirming the importance of keystone actors or tenant firms in knowledge ecosystems.

5.4. The Sustainability of Competitive Advantage

As the keystone actor, the UCT Liberty ISM's approach to the sustainability of their knowledge ecosystem's strategic advantage is also caught between two tensions. On the one hand, the research output that they offer, once explored and exposed, is available for all constituents to further exploit, and, as such, the focal output is by nature transient and not enduring. The brand equity and the brand recognition of the Institute, the intangible assets and the by-products of their knowledge base, do, however, contribute to a longer term sustainable competitive advantage over other potential market entrants. The process of knowledge exploration, however, takes time, which adds another layer of complexity in the process of achieving rapidly created advantages, typical of a transient advantage strategic approach.

6. Implications

6.1. Theoretical Implications

To address how competition works in knowledge ecosystems, and building on existing theoretical ideas, three theoretical implications were put forward. First, knowledge ecosystems mostly operate in a pre-competitive context. From a theoretical perspective, this means that, although the keystone actor constantly senses the competitive context and shows acute awareness of the market, resources and capabilities are not necessarily mobilized to seize identified opportunities. Logic dictates that this is because value creation of the explored knowledge mostly occurs outside of the realm of the knowledge ecosystem. As such, following the fundamental premise of the R-A theory, the keystone actor in this case does not possess full control over its resource-base or assets to pursue opportunities that fall outside of its core value proposition. As a result, the process of transformation is slow and time-consuming, which further impacts the opportunity to quickly capitalize on other potential value-adding strategic advantages. From a knowledge management perspective, this might prove to be a risky strategic approach, as specialized, tacit knowledge resources are inherently scarce and should be utilized to the optimal benefit of the ecosystem [87]. Second, the non-hierarchical nature of ecosystems further has a bearing on its ability to adapt to changes in their market and competitive context. Although the ecosystem-level output of knowledge ecosystems relies on collaborative, interdependent, and networked relationships between actors, the primarily externally focused orientation could mean that resources and capabilities could easily move from being complementary to competitive.

Collaborative activity with competitors in itself is not unusual but, coupled with external opportunities not pursued, as in the first point, could lead to competitive value propositions in the same market. Third, the dynamics of competition within knowledge ecosystems point to the importance of also considering the constructs of time and control. From DCs and AMCs perspectives, attentiveness and sensing of changing market dynamics are present within the knowledge ecosystem context, as is the ability to execute or transform swiftly due to the time it takes to explore knowledge as well as the limited control that the keystone actor exerts on all the other actors in the ecosystem.

6.2. Managerial Implications

Analogous to the biological ecosystem metaphor, knowledge ecosystems need to similarly adapt and evolve to their environmental contexts to attract the complementary actors, critical for the survival of the whole ecosystem. Knowledge ecosystems do, however, show great potential to connect and coevolve with actors in other ecosystems, e.g., innovation and entrepreneurial ecosystems, who could, in turn, exploit the knowledge commons for commercial purposes. Employing the concept of panarchy, when the competitive equilibrium in a natural ecosystem is disturbed by radical changes, the ecosystem can either welcome and embrace change or go through a period of restoration. Based on the comparative review of how the preeminent theories of strategy within the marketing literature view competition, this does not, however, show to be the most advantageous strategy to follow in a hypercompetitive and fast-changing market. Finally, for value-adding advantages to be created, new knowledge is needed but perhaps not necessarily only as an artifact. New knowledge can take many forms, including business models, business processes, as well as differentiated knowledge experiences. The challenge is to sustain the ecosystem to be able to continue competing.

7. Concluding Remarks, Limitations, and Future Areas of Research

Knowledge ecosystems provide novel opportunities to contribute to the coevolution and the growth of other ecosystems as well as geographic and regional clusters or learning regions. By using a single case study focused on the keystone actor within a knowledge ecosystem, this paper employed a theory elaboration approach to explore the dynamics of competition within knowledge ecosystems. Based on key streams of strategic thought, the findings indicate that knowledge ecosystems mainly operate in a pre-competitive state, and that knowledge exploration entails a time-consuming process that leads the keystone actor to focus on transient rather than sustainable competitive advantage.

The use of a single case study is not without its limitations, however, the rich insights offered by this design provided the researcher with the ability to gather information that is exploratory in nature and that would otherwise not have been possible to elicit through other forms of data collection [88]. Knowledge ecosystems are admittedly multi-level, and, as such, competition will have many other facets based on the various levels and the actors' perspectives. This is an area that offers numerous avenues for future research. By presenting the perspective of the keystone actor, the paper does, however, add to our extant understanding of how competition works by acknowledging the role that the focal organizational entity plays in setting the strategic agenda and the orientation of the knowledge ecosystem. Finally, adopting a theory elaboration approach with three particular streams of thought predetermined implies that other theories or perspectives on competition and inherent strategic orientations were excluded. Future research could use the theoretical lenses provided by learning theory and chaos theory to further probe the inherent processes within knowledge ecosystems. Future research would thus further contribute to our understanding of the competitive forces inherent to knowledge ecosystems by also probing the business models that they employ and comparatively assessing their interaction with other innovation or entrepreneurial ecosystem actors.

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References

1. Baden-Fuller, C.; Teece, D.J. Market Sensing, Dynamic Capability, and Competitive Dynamics. *Ind. Mark. Manag.* **2020**, *89*, 105–106. [\[CrossRef\]](#)
2. Hunt, S.D.; Madhavaram, S. Adaptive Marketing Capabilities, Dynamic Capabilities, and Renewal Competences: The “Outside vs. inside” and “Static vs. Dynamic” Controversies in Strategy. *Ind. Mark. Manag.* **2020**, *89*, 129–139. [\[CrossRef\]](#)
3. Vargo, S.L.; Akaka, M.A.; Wieland, H. Rethinking the Process of Diffusion in Innovation: A Service-Ecosystems and Institutional Perspective. *J. Bus. Res.* **2020**, *116*, 526–534. [\[CrossRef\]](#)
4. Day, G.S. An Outside-in Approach to Resource-Based Theories. *J. Acad. Mark. Sci.* **2014**, *42*, 27–28. [\[CrossRef\]](#)
5. Day, G. The Yin and Yang of Outside-in Thinking. *Ind. Mark. Manag.* **2020**, *88*, 84–86. [\[CrossRef\]](#)
6. Velu, C. Knowledge Management Capabilities of Lead Firms in Innovation Ecosystems. *AMS Rev.* **2015**, *5*, 123–141. [\[CrossRef\]](#)
7. Zhang, J.Z.; Watson, G.F., IV. Marketing Ecosystem: An Outside-in View for Sustainable Advantage. *Ind. Mark. Manag.* **2020**, *88*, 287–304. [\[CrossRef\]](#)
8. Aarikka-Stenroos, L.; Ritala, P. Network Management in the Era of Ecosystems: Systematic Review and Management Framework. *Ind. Mark. Manag.* **2017**, *67*, 23–36. [\[CrossRef\]](#)
9. Akaka, M.A.; Vargo, S.L.; Lusch, R.F. The Complexity of Context: A Service Ecosystems Approach for International Marketing. *J. Int. Mark.* **2013**, *21*, 1–20. [\[CrossRef\]](#)
10. Frow, P.; McColl-Kennedy, J.R.; Payne, A. Co-Creation Practices: Their Role in Shaping a Health Care Ecosystem. *Ind. Mark. Manag.* **2016**, *56*, 24–39. [\[CrossRef\]](#)
11. Möller, K.; Halinen, A. Managing Business and Innovation Networks—From Strategic Nets to Business Fields and Ecosystems. *Ind. Mark. Manag.* **2017**, *67*, 5–22. [\[CrossRef\]](#)
12. Wilkinson, I.F.; Young, L.C. The Past and the Future of Business Marketing Theory. *Ind. Mark. Manag.* **2013**, *42*, 394–404. [\[CrossRef\]](#)
13. Thomas, L.D.W.; Autio, E. Innovation Ecosystems in Management: An Organizing Typology. In *Oxford Research Encyclopedia of Business and Management*; Oxford University Press: Oxford, UK, 2020. [\[CrossRef\]](#)
14. Penrose, E.; Penrose, E.T. *The Theory of the Growth of the Firm*; Oxford University Press: Oxford, UK, 2009.
15. Prahalad, C.K.; Hamel, G.G. The Core Competence of the Corporation. *Harv. Bus. Rev.* **1990**, *68*, 295–336.
16. Yu, C.; Zhang, Z.; Lin, C.; Wu, Y. Knowledge Creation Process and Sustainable Competitive Advantage: The Role of Technological Innovation Capabilities. *Sustainability* **2017**, *9*, 2280. [\[CrossRef\]](#)
17. Järvi, K.; Almpantopoulou, A.; Ritala, P. Organization of Knowledge Ecosystems: Prefigurative and Partial Forms. *Res. Policy* **2018**, *47*, 1523–1537. [\[CrossRef\]](#)
18. Clarysse, B.; Wright, M.; Bruneel, J.; Mahajan, A. Creating Value in Ecosystems: Crossing the Chasm between Knowledge and Business Ecosystems. *Res. Policy* **2014**, *43*, 1164–1176. [\[CrossRef\]](#)
19. Autio, E.; Thomas, L.D.W. Value Co-Creation in Ecosystems: Insights and Research Promise from Three Disciplinary Perspectives. In *Handbook of Digital Innovation*; Edward Elgar Publishing: Cheltenham, UK, 2020; pp. 107–132. [\[CrossRef\]](#)
20. Van der Borgh, M.; Clodt, M.; Romme, A.G.L. Value Creation by Knowledge-Based Ecosystems: Evidence from a Field Study. *RD Manag.* **2012**, *42*, 150–169.
21. Whitley, K.A.; Puto, C.P. The Influence of the Board of Directors on Outside-in Strategy. *Ind. Mark. Manag.* **2020**, *90*, 143–154. [\[CrossRef\]](#)
22. Maanen, J.V.; Sørensen, J.B.; Mitchell, T.R. The Interplay between Theory and Method. *Acad. Manag. Rev.* **2007**. [\[CrossRef\]](#)
23. Hunt, S.D.; Morgan, R.M. The Comparative Advantage Theory of Competition. *J. Mark.* **1995**, *59*, 1–15. [\[CrossRef\]](#)
24. Teece, D.J.; Pisano, G.; Shuen, A. Dynamic Capabilities and Strategic Management. *Strateg. Manag. J.* **1997**, *18*, 509–533. [\[CrossRef\]](#)
25. Day, G.S. Closing the Marketing Capabilities Gap. *J. Mark.* **2011**, *75*, 183–195. [\[CrossRef\]](#)
26. Barney, J.B. How Marketing Scholars Might Help Address Issues in Resource-Based Theory. *J. Acad. Mark. Sci.* **2014**, *42*, 24–26. [\[CrossRef\]](#)
27. Hunt, S.D.; Lambe, C.J. Marketing’s Contribution to Business Strategy: Market Orientation, Relationship Marketing and Resource-Advantage Theory. *Int. J. Manag. Rev.* **2000**, *2*, 17–43. [\[CrossRef\]](#)

28. Hunt, S.D.; Morgan, R.M. The Resource-Advantage Theory of Competition: Dynamics, Path Dependencies, and Evolutionary Dimensions. *J. Mark.* **1996**, *60*, 107–114. [[CrossRef](#)]
29. Hunt, S.D. A General Theory of Competition: Too Eclectic or Not Eclectic Enough? Too Incremental or Not Incremental Enough? Too Neoclassical or Not Neoclassical Enough? *J. Macromark.* **2000**, *20*, 77–81. [[CrossRef](#)]
30. Teece, D.J. Hand in Glove: Open Innovation and the Dynamic Capabilities Framework. *Strateg. Manag. Rev.* **2020**, *1*, 233–253. [[CrossRef](#)]
31. Akter, S.; Gunasekaran, A.; Wamba, S.F.; Babu, M.M.; Hani, U. Reshaping Competitive Advantages with Analytics Capabilities in Service Systems. *Technol. Forecast. Soc. Chang.* **2020**, *159*, 120180. [[CrossRef](#)]
32. Teece, D.J. The Foundations of Enterprise Performance: Dynamic and Ordinary Capabilities in an (Economic) Theory of Firms. *Acad. Manag. Perspect.* **2014**, *28*, 328–352. [[CrossRef](#)]
33. Zollo, M.; Cennamo, C.; Neumann, K. Beyond What and Why: Understanding Organizational Evolution towards Sustainable Enterprise Models. *Organ. Environ.* **2013**, *26*, 241–259. [[CrossRef](#)]
34. Day, G.S.; Moorman, C. *Strategy from the Outside in: Profiting from Customer Value*; McGraw Hill Professional: New York, NY, USA, 2010.
35. Moorman, C.; Day, G.S. Organizing for Marketing Excellence. *J. Mark.* **2016**, *80*, 6–35. [[CrossRef](#)]
36. Wang, C.L.; Ahmed, P.K. Dynamic Capabilities: A Review and Research Agenda. *Int. J. Manag. Rev.* **2007**, *9*, 31–51. [[CrossRef](#)]
37. Shen, J.; Sha, Z.; Wu, Y.J. Enterprise Adaptive Marketing Capabilities and Sustainable Innovation Performance: An Opportunity–Resource Integration Perspective. *Sustainability* **2020**, *12*, 469. [[CrossRef](#)]
38. Day, G.S. The Capabilities of Market-Driven Organizations. *J. Mark.* **1994**, *58*, 37–52. [[CrossRef](#)]
39. Rust, R.T. Outside-in Marketing: Why, When and How? *Ind. Mark. Manag.* **2019**, *89*, 102–104. [[CrossRef](#)]
40. Teece, D.J. Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance. *Strateg. Manag. J.* **2007**, *28*, 1319–1350. [[CrossRef](#)]
41. Hannah, D.P.; Eisenhardt, K.M. How Firms Navigate Cooperation and Competition in Nascent Ecosystems. *Strateg. Manag. J.* **2018**, *39*, 3163–3192. [[CrossRef](#)]
42. Jaakkola, M.; Möller, K.; Parvinen, P.; Evanschitzky, H.; Mühlbacher, H. Strategic Marketing and Business Performance: A Study in Three European ‘Engineering Countries. *Ind. Mark. Manag.* **2010**, *39*, 1300–1310. [[CrossRef](#)]
43. Matthyssens, P.; Vandenbempt, K. Creating Competitive Advantage in Industrial Services. *J. Bus. Ind. Mark.* **1998**, *13*, 339–355. [[CrossRef](#)]
44. Kaleka, A. Resources and Capabilities Driving Competitive Advantage in Export Markets: Guidelines for Industrial Exporters. *Ind. Mark. Manag.* **2002**, *31*, 273–283. [[CrossRef](#)]
45. Hakansson, H.; Snehota, I. No Business Is an Island: The Network Concept of Business Strategy. *Scand. J. Manag.* **2006**, *22*, 256–270. [[CrossRef](#)]
46. Holling, C.S.; Gunderson, L.H. *Panarchy: Understanding Transformations in Human and Natural Systems*; Island Press: Washington, DC, USA, 2002.
47. Thomson, A.J. How Should We Manage Knowledge Ecosystems? Using Adaptive Knowledge Management! In *Sustainable Forestry: From Monitoring and Modelling to Knowledge Management and Policy Science*; Reynolds, K.M., Thomson, A.J., Köhl, M., Shannon, M.A., Ray, D., Rennolls, K., Eds.; Oxford University Press: Oxford, UK, 2007; pp. 461–479.
48. Pfeffer, J.; Salancik, G.R. *The External Control of Organizations: A Resource Dependence Perspective*; Stanford University Press: Stanford, CA, USA, 2003.
49. Ancarani, F.; Costabile, M. Coopetition Dynamics in Convergent Industries: Designing Scope Connections to Combine Heterogeneous Resources. In *Coopetition: Winning Strategies for the 21st Century*; Edward Elgar Publishing: Cheltenham, UK, 2010; pp. 216–237.
50. McGrath, R.G. Transient Advantage. *Harv. Bus. Rev.* **2013**, *91*, 62–70.
51. D’Aveni, R.A. Waking up to the New Era of Hypercompetition. *Wash. Q.* **1998**, *21*, 183–195. [[CrossRef](#)]
52. Botes, M.; Pretorius, M. Exploring Management Perceptions of Competitive versus Transient Advantage. *J. Contemp. Manag.* **2020**, *17*, 41–63. [[CrossRef](#)]
53. Madhok, A.; Marques, R. Towards an Action-Based Perspective on Firm Competitiveness. *BRQ Bus. Res. Q.* **2014**, *17*, 77–81. [[CrossRef](#)]

54. Kelly, E. *Business Ecosystems Come of Age*; Business Trends; Industry Report; Deloitte University Press: London, UK, 2015; pp. 1–17.
55. Hawley, A.H. *Human Ecology: A Theoretical Essay*, 1st ed.; The University of Chicago Press: Chicago, IL, USA, 1986.
56. Moore, J.F. Predators and Prey: A New Ecology of Competition. *Harv. Bus. Rev.* **1993**, *71*, 75–86.
57. Bathelt, H.; Cohendet, P. The Creation of Knowledge: Local Building, Global Accessing and Economic Development—Toward an Agenda. *J. Econ. Geogr.* **2014**, *14*, 869–882. [[CrossRef](#)]
58. Scaringella, L.; Radziwon, A. Innovation, Entrepreneurial, Knowledge, and Business Ecosystems: Old Wine in New Bottles? *Technol. Forecast. Soc. Chang.* **2018**, *136*, 59–87. [[CrossRef](#)]
59. Valkokari, K. Business, Innovation, and Knowledge Ecosystems: How They Differ and How to Survive and Thrive within Them. *Technol. Innov. Manag. Rev.* **2015**, *5*, 17–24. [[CrossRef](#)]
60. Iansiti, M.; Levien, R. *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability*; Harvard Business Press: Boston, MA, USA, 2004.
61. Fuller, J.; Jacobides, M.G.; Reeves, M. The Myths and Realities of Business Ecosystems. *MIT Sloan Manag. Rev.* **2019**, *60*, 1–9.
62. Kapoor, R. Ecosystems: Broadening the Locus of Value Creation. *J. Organ. Des.* **2018**, *7*, 12. [[CrossRef](#)]
63. Granstrand, O.; Holgersson, M. Innovation Ecosystems: A Conceptual Review and a New Definition. *Technovation* **2020**, *90–91*, 102098. [[CrossRef](#)]
64. McColl-Kennedy, J.R.; Cheung, L.; Coote, L.V. Tensions and Trade-Offs in Multi-Actor Service Ecosystems. *J. Bus. Res.* **2020**, S0148296320304288. [[CrossRef](#)]
65. Adner, R. Ecosystem as Structure: An Actionable Construct for Strategy. *J. Manag.* **2017**, *43*, 39–58. [[CrossRef](#)]
66. Peltier, J.W.; Dahl, A.J.; Swan, E.L. Digital Information Flows across a B2C/C2C Continuum and Technological Innovations in Service Ecosystems: A Service-Dominant Logic Perspective. *J. Bus. Res.* **2020**. [[CrossRef](#)]
67. Trischler, J.; Johnson, M.; Kristensson, P. A Service Ecosystem Perspective on the Diffusion of Sustainability-Oriented User Innovations. *J. Bus. Res.* **2020**, *116*, 552–560. [[CrossRef](#)]
68. Moore, J.F. Business Ecosystems and the View from the Firm. *Antitrust Bull.* **2006**, *51*, 31–75. [[CrossRef](#)]
69. Quero Gervilla, M.J.; Díaz-Mendez, M.; Gummesson, E. Balanced Centricity and Triads: Strategies to Reach Ecosystem Equilibrium in the Arts Sector. *J. Bus. Ind. Mark.* **2019**, *35*, 447–456. [[CrossRef](#)]
70. Vargo, S.L.; Lusch, R.F. Service-Dominant Logic 2025. *Int. J. Res. Mark.* **2017**, *34*, 46–67. [[CrossRef](#)]
71. Adner, R. Match Your Innovation Strategy to Your Innovation Ecosystem. *Harv. Bus. Rev.* **2006**, *84*, 98–107.
72. Jacobides, M.G.; Cennamo, C.; Gawer, A. Towards a Theory of Ecosystems. *Strateg. Manag. J.* **2018**, *39*, 2255–2276. [[CrossRef](#)]
73. Hess, C.; Ostrom, E. Introduction: An Overview of the Knowledge Commons. In *Understanding Knowledge as a Commons: From Theory to Practice*; MITP: Cambridge, MA, USA, 2007; pp. 3–26.
74. Fisher, G.; Aguinis, H. Using Theory Elaboration to Make Theoretical Advancements. *Organ. Res. Methods* **2017**, *20*, 438–464. [[CrossRef](#)]
75. Flick, U. *The SAGE Handbook of Qualitative Data Analysis*; SAGE: Thousand Oaks, CA, USA, 2013.
76. Ritchie, J.; Lewis, J.; Lewis, P.; Nicholls, C.M.; Ormston, R. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*; SAGE: Thousand Oaks, CA, USA, 2013.
77. Supphellen, M. Understanding Core Brand Equity: Guidelines for In-Depth Elicitation of Brand Associations. *Int. J. Mark. Res.* **2000**, *42*, 1–14. [[CrossRef](#)]
78. Brounéus, K. In-Depth Interviewing: The Process, Skill and Ethics of Interviews in Peace Research. In *Understanding Peace Research: Methods and Challenges*; Høglund, K., Oberg, M., Eds.; Routledge: New York, NY, USA, 2011; pp. 130–146.
79. Cunningham, J.A.; Menter, M.; Young, C. A Review of Qualitative Case Methods Trends and Themes Used in Technology Transfer Research. *J. Technol. Transf.* **2017**, *42*, 923–956. [[CrossRef](#)]
80. Jones, B.; Temperley, J.; Lima, A. Corporate Reputation in the Era of Web 2.0: The Case of Primark. *J. Mark. Manag.* **2009**, *25*, 927–939. [[CrossRef](#)]
81. Yin, R.K. *Case Study Research and Applications: Design and Methods*; SAGE: Thousand Oaks, CA, USA, 2017.
82. Lee, T.W.; Mitchell, T.R.; Sablinski, C.J. Qualitative Research in Organizational and Vocational Psychology, 1979–1999. *J. Vocat. Behav.* **1999**, *55*, 161–187. [[CrossRef](#)]
83. Gibbert, M.; Ruigrok, W.; Wicki, B. What Passes as a Rigorous Case Study? *Strateg. Manag. J.* **2008**, *29*, 1465–1474. [[CrossRef](#)]

84. March, J.G. Exploration and Exploitation in Organizational Learning. *Organ. Sci.* **1991**, *2*, 71–87. [[CrossRef](#)]
85. Archer-Brown, C.; Kietzmann, J. Strategic Knowledge Management and Enterprise Social Media. *J. Knowl. Manag.* **2018**, *22*, 1288–1309. [[CrossRef](#)]
86. Erevelles, S.; Horton, V.; Fukawa, N. Imagination in Marketing. *Mark. Manag. J.* **2007**, *17*, 109–119.
87. Grant, R.M. Toward a Knowledge-Based Theory of the Firm: Knowledge-Based Theory of the Firm. *Strateg. Manag. J.* **1996**, *17*, 109–122. [[CrossRef](#)]
88. Ferreira, C.C.; Lord Ferguson, S.; Pitt, L.F. Entrepreneurial Marketing and Hybrid Entrepreneurship: The Case of JM Reid Bamboo Rods. *J. Mark. Manag.* **2019**, *35*, 867–885. [[CrossRef](#)]



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