A Coming of Age: Reviewing and Reinvigorating the Strategic Role of Firm Age in Boundary-Changing Activities

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Abstract

Few activities are more central to corporate strategy execution than acquisitions, alliances, and divestitures. Yet, despite their indispensability, difficulties and disappointments with their implementation continue to plague firms. In efforts to help remedy these shortcomings, researchers have investigated how numerous firm-specific factors, including firm age, may shape the execution and outcomes of these three boundary-changing activities. Recent research progress and new perspectives about both firm age and boundary-changing activities suggest that their relationship demands reinvigorated attention. To meet this need, we begin by systematically reviewing the extant literature on firm age and the implementation of acquisitions, alliances, and divestitures to assess what has been learned. We synthesize our findings using an organizing framework, discerned from the review, that is structured around the three pillars of when, how, and what: (i) when does firm age play a role in the acquisition, alliance, and divestiture processes; (ii) how does firm age stimulate and shape these boundary-changing activities; and (iii) what are the effects of firm age on these activities and their outcomes. Then, drawing upon the themes and insights that these works reveal and evaluating them against the backdrop of new developments concerning firm age and boundary-changing activities, we advance a series of recommendations for future research and implications for practice.

Introduction

Acquisitions, alliances, and divestitures are the mainstay of the firm's corporate development toolkit. Although these boundary-changing activities (BCAs) are thoroughly familiar to both scholars and practitioners alike, their execution all too frequently falls vexingly short of their promise (Dranikoff, Koller, & Schneider, 2002; Inkpen, 1996; Martin, 2016). Amongst the extensive efforts that researchers have undertaken to help identify and rectify the drivers of this substantial value loss (Graebner et al., 2017; Gulati, Wohlgezogen, & Zhelyazkov, 2012), one trajectory has explored how the age of the firm engaging in these activities may play a role in their implementation and outcomes (Arikan & Stultz, 2016; Chang & Singh, 1999; Sivadasan et al., 2024; Stuart, 2000). Should this relationship be deciphered, the potential rewards are poised to be significant: while aging's ticking clock can be neither accelerated nor slowed, the advantages and challenges associated with the processes that aging represents – from experience-honing and reputation-building to ossification and obsolescence – can be proactively harnessed, mitigated, or preempted as circumstances demand (Hannan & Freeman, 1984; Stinchcombe, 1965). The more that is learned about the interplay between firm age and BCAs, the more that firms will know when and what to expect – and can then position themselves to improve their odds of implementation success accordingly (Coad, 2018; Mata & Portugal, 2002).

While both firm age and the suite of acquisitions, alliances, and divestitures each have well-established research histories, they are still vibrant, dynamic topics (Bakker & Josefy, 2018; Devers et al., 2020; Feldman, 2021; Schijven et al., 2024; Ferrigno, Martin, & Battista Dagnino, 2024). New perspectives emerging from their study, in addition to ongoing, fundamental shifts in the business landscape, are nullifying long-held assumptions and revealing new opportunities for improving our grasp of BCA execution. For example, there has been a recent surge of interest in

examining BCA execution in combination, rather than on an individual, tool-by-tool basis, as this holistic view more realistically reflects what occurs in practice (Feldman, 2021; Kochura, Mirc, & Lacoste, 2022; Vidal, 2021). Regarding firm age, for instance, the increased heft and accessibility of the capital markets has enabled young firms to rapidly accrue resources previously available only to older established firms – and, in so doing, has consequently overturned preconceived expectations of young firms' size, structure, growth, perceived legitimacy, and strategic approaches in the process (Chen, Elliott, & Koh, 2023; Choi & Shepherd, 2005; Coad, 2018).

The significance of recent developments like these, in combination with the urgency to improve acquisition, alliance, and divestiture execution, makes this an apt time to assess what is known about the role of firm age in BCAs, and, in turn, leverage these insights to guide future research and practice. Our objective in this paper is to help address this need.

In so doing, we are emboldened by the robust literature that has studied firm age in conjunction with other types of corporate strategic activities, and to great effect (Bakker & Josefy, 2018; Coad, 2018). Scholars have examined the role of firm age in activities as varied as diversification (de Figueiredo, Rawley & Rider, 2015; Xie & O'Neill, 2014), innovation (Balasubramanian & Lee, 2008; Cohen & Levinthal, 1990; Sørensen & Stuart, 2000; Tschang & Ertug, 2016), firm capability development (Kotha, Zheng, & George, 2011; Leonard-Barton, 1992), and internationalization (Autio et al., 2000; Carr et al., 2010; Guillén, 2002). Through our focus on the relationship between firm age and BCAs, we complement these works.

We begin our review by setting the stage for the research, providing foundational background and highlighting new perspectives in the firm age and BCA literature streams. Next, we describe our methodological approach, detailing the review process employed to build the paper's sample and introducing the three-component When-How-What (WHW) organizing framework used to

structure and integrate the review's findings. This framework, distilled from the review itself, explicates the "when," "how," and "what" of firm age's role in acquisition, alliance, and divestiture implementation. We then present and discuss the paper's results, by first providing an overview of the state of the literature and then identifying the themes and insights that surfaced with the WHW-structured synthesis. Finally, we use the findings and gaps revealed by the review as a springboard to develop recommendations for future research and practice.

Firm Age and Boundary-Changing Activities: Foundations and Recent Developments

Firm age

Firm age has long been widely utilized as a key construct across disciplines and theories. Much of its appeal stems from its strength as a proxy; it is used to represent a variety of factors – such as firm experience, structural rigidity, and legitimacy – that are crucial components in deciphering why firms fail, survive, and thrive (Ranger-Moore, 1997; Ruef & Scott, 1998; Thornhill & Amit, 2003). Further, age itself and the aging process are readily observed and measured, whereas the outcomes and processes they represent are typically not.

Ardent study of firm age and its ramifications as it pertains to strategy and organizations is often marked by Stinchcombe's (1965) proposal of the "liability of newness," which posits that organizational death rates decrease with age. He suggests that young firms' vulnerabilities arise due to such factors as their reliance on relationships with "strangers" (e.g., suppliers, customers), limited learning experience, and a lack of trust amongst employees. As they age, organizations are granted the time needed to develop buffers against these weaknesses by building the relationships, reputations, processes, and structures that help to support and perpetuate their survival (Hannan, 1998). Stinchombe's ideas not only spurred additional explanations of the relationship between firm age and mortality – such as the "liability of senescence" (Barron et al., 1994) and "liability of

adolescence" (Bruderl & Schussler, 1990; Fichman & Levinthal, 1991) – but also fueled research that applied and amplified age-oriented theorizing and study in the strategic management literature. **Table A1.1** (in the online **Appendix 1**) shares representative explanations of how firm age and its effects may unfold, as viewed through the lenses of different theoretical perspectives commonly invoked in organizational age-oriented research. These lenses and interpretations in **Table A1.1** are by no means exhaustive; they are intended to offer an introductory sampling of the diverse age-related thinking that is woven throughout strategic management scholarship.

Firm age and firm size: Organizational ecology research has consistently included both firm age and firm size as fundamental predictors of survival (Hannan, 1998). They are conceptually distinct: age represents temporal processes such as learning and legitimacy, whereas size reflects factors such as scale and slack (Aldrich & Auster, 1986; Hannan & Freeman, 1984). Yet, firm age and size are often empirically intertwined, since larger firms (typically) tend to be older. Thus, classic studies in organizational ecology examined firm age and size jointly, and worked to disentangle, for example, the liability of newness from the liability of smallness (Barron et al., 1994; Freeman, Carroll, & Hannan, 1983; Hannan et al., 1998; Ranger-Moore, 1997).

However, the interrelationship between firm age and size has sometimes led to their conflation in strategic management research, where firm size is more routinely examined (Bakker & Josefy, 2018). Treating firm size as a proxy for firm age obscures the distinct mechanisms each represents, which is consequential in BCA execution. Firms of the same size but different ages may face divergent challenges – for example, younger firms may easily adapt in alliances but lack established routines for acquisitions, whereas older firms may have acquisition experience but struggle with divestiture-related inertia – and empirical results would therefore change if age was modeled alongside size. Recognizing both the interrelationship and the conceptual distinction

between age and size is thus essential for a clear understanding of BCA execution.

Current developments in firm age research: Recent shifts in the business environment have made firm age research especially timely. One development pertains to scholarly interest in what we call "age-amalgamated firms." Due in part to market pressures (along with activist investor demands) for firm focus and its corresponding efficiencies, divestiture activity has been intensifying (Feldman, 2021). Moreover, the confluence of the rise in private equity, industry consolidation, and a favorable economic context in the years following the global financial crisis led to a boom in M&A transactions (PwC, 2022). This heightened buying and selling has created a profusion of firms that reflect an amalgamation of parts, each with its own age (be that measured from acquisition year or the target's original founding year). Scholars have started to consider the ramifications of these "composite" ages on firm processes and actions (Haveman, 1995; Kim, Lu, & Rhee; 2012; Rabbiosi & Santangelo, 2013; Zajac, Golden, & Shortell, 1991).

Another development concerns the growing number of firms defying the expectations of their ages ("age-defying firms"). Specifically, old firms are appearing as younger than their ages would conventionally dictate, and young firms are presenting as older (Bakker & Josefy, 2018). In the former, "new" firms created by M&A and divestiture spinoffs receive a fresh start and a reset of their liability-of-newness clocks, but with resource endowments already earned during their maturation (Amburgey, Kelly, & Barnett, 1990; Le Mens, Hannan, & Polos, 2011). In the latter, boosted by easy access to capital, a robust IPO market, and more favorable stakeholder perceptions of firm youth (Choi & Shepard, 2005), young firms can now rapidly amass resources and advantages traditionally available only to mature firms – and do so unencumbered by the liabilities of aging that normally accompany these benefits (Bakker & Josefy, 2018; Coad et al., 2014). How these age-based contradictions affect age-defying firms and their operations is a key issue.

Firms' boundary-changing activities

Broadly defined, firms' BCAs refer to strategic actions that grow or shrink the firm. These may be internal organic activities, such as R&D and product development, or external inorganic activities, of which acquisitions, alliances, and divestitures are the primary set. We focus on the latter and adopt an inclusive view, such that the "acquisitions" category encompasses mergers, "alliances" includes JVs, and "divestitures" captures both selloff and spinoff transactions.

Acquisitions, alliances, and divestitures are vital tools for firms to enact their corporate strategy plans, yet their implementation is complex and challenging – and thus rife with potential for value destruction (Gole & Hilger, 2008; Graebner et al., 2017; Gulati et al., 2012). One driver of their execution difficulties stems from the numerous processes that underpin these activities and the disparate skills that each requires (Jemison & Sitkin, 1986; Kale & Singh, 2009; Moschieri, 2011). Executing a BCA requires navigating multiple process phases, with each demanding distinct capabilities to implement and each presenting potential points of failure. These stages span the entire process: selecting the type(s) of BCA that fits the firm's strategic needs (Villalonga & McGahan, 2005); searching for and selecting an appropriate counterparty, such as an alliance partner or divested unit buyer (Lin, Yang, & Arya, 2009; Rothaermel & Boeker, 2008); negotiating and structuring deal terms (Schilke & Lumineau, 2018); and managing wide array of post-transaction responsibilities, such as determining the degree of integration for an acquisition target or renegotiating an alliance agreement (Puranam, Singh, & Chaudhuri, 2009; Reuer & Ariño, 2002). Together, these stages underscore the extensive and varied capabilities that BCA execution requires and the myriad points at which implementation may falter. Further, while acquisitions, alliances, and divestitures share some similarities in the skills needed across their process stages (Bingham et al., 2015), each BCA type poses specific requirements – for example, pre-close seller-

unit separation in divestiture compared to post-close buyer-target integration in acquisition (McGrath & Nerkar, 2024) – which compounds the overall difficulty of BCA execution.

Extensive research has been directed towards identifying what factors may be facilitating or impeding successful outcomes for each BCA, and under what circumstances. These include environmental factors (regulatory conditions, industry munificence), managerial factors (TMT prior deal experience, CEO compensation, CEO risk aversion), and deal characteristics (method of payment in acquisitions, contract terms in alliances, target size in divestitures), and firm characteristics (prior BCA experience, size, performance) (Devers et al., 2020; Haleblian et al., 2009; Kale & Singh, 2009; Lee & Madhavan, 2010).

The difficulties and risks associated with BCA execution have also encouraged vigorous scholarly attention towards how firms may learn to perform these activities successfully and build the capabilities needed to do so consistently (Anand & Khanna, 2000; Barkema & Schijven, 2008; Erl et al., 2023). This research has identified, for example, the potential benefits of codifying lessons learned from one deployment to the next (Zollo & Singh, 2004), of managing activity responsibilities and knowledge centrally (such as with a dedicated alliance function; Kale, Dyer, & Singh, 2002), and of executing in a serial or programmatic manner (Laamanen & Keil, 2008).

Current developments in BCA research: One development in the BCA literature has been a shift towards adopting a holistic view of BCA activities, wherein their execution is studied in combination (Feldman, 2021; Kochura et al., 2022; Vidal, 2021). As research in this burgeoning stream has demonstrated, studying BCAs' combined execution encourages investigation of their interdependencies and learning transfer opportunities (Capron, Mitchell, & Swaminathan, 2001; Doan et al., 2018; Yang, Lin, & Peng, 2011; Mellewigt et al., 2017; Zollo & Reuer, 2010). Further, this holistic view more accurately represents BCA execution in practice (Feldman, 2020;

Sivadasan et al., 2024). For example, strategic initiatives, such as corporate renewal and internationalization, routinely require multiple BCAs to meet objectives (Harrigan & Wing, 2021).

In tandem, another BCA research development has been spurred by a recent push towards studying divestiture execution specifically. Divestiture has historically been relatively under-researched in the literature, even though it accounts for approximately one-third of M&A deal volume (Feldman & McGrath, 2016). The current rise in interest has propelled divestiture's developing reputation as a tool for firm growth (Kaul, 2012; Vidal & Mitchell, 2018): while divestiture shrinks firm boundaries, the act of divesting also releases internal firm resources (e.g., managerial attention, manufacturing capacity) that can then be redeployed towards more value-enhancing and entrepreneurial ends for the firm (Bennett & Feldman, 2017; Berry, 2010).

Why study firm age and firm boundary-changing activities, and why now

Making sense of what is already known about firm age and the execution of acquisitions, alliances, and divestitures is essential, as it provides the foundation on which to build more effective solutions for BCA implementation. BCAs remain among the most consequential levers of corporate strategy, yet their execution continues to disappoint (Dranikoff et al., 2002; Martin, 2016). This concern is made more pressing by firms' increasing reliance upon these tools. Research in strategic management has explored many factors that shape BCA execution and outcomes (Graebner et al., 2017; Gulati et al., 2012), but firm age has received comparatively little sustained attention (Bakker & Josefy, 2018). This stands in contrast to the well-established focus in organizational ecology on age dependence in survival and growth (Hannan, 1998). Recent developments make this integration especially timely: both firm age and BCAs are dynamic areas of inquiry, and our review addresses four emerging streams where their intersection is particularly promising. Although firm age itself is not a lever managers can directly manipulate or control, age

represents processes – such as learning, legitimacy building, and inertia – that firms can anticipate, preempt, and mitigate through strategic action (Coad, 2018). This carries important implications for practice. Managers can prepare for age-related challenges, policymakers can design interventions better aligned with the distinct needs of firms and their BCAs at different stages of development, and investors can refine their assessments of the risks and opportunities tied to firms' BCAs. Taken together, these considerations highlight why revisiting and reinvigorating attention to firm age in the context of acquisitions, alliances, and divestitures is overdue and urgent.

Methodology

Our methodology had two major components: (1) sample development, which included sourcing appropriate journals, searching for paper candidates, and assessing their suitability for the review sample, and (2) sample analysis, which involved evaluating, classifying, and synthesizing the sample papers and their insights. (We provide additional methodological details that supplement this section online in **Appendix 2**.)

Sample development: We began by determining the pool of journals to use in our search for paper candidates for the review sample. To ensure that papers were grounded in rigorous research, only high-quality, peer-reviewed journals were to be included. Additionally, since research on firm age and BCAs is informed by multiple disciplines beyond strategy (such as sociology, finance, and entrepreneurship), the set of journals used in the search process had to reflect this expansive scope.

To address these requirements, we developed our journal search-set by including all journals on the *Financial Times* "FT50" list (a diverse collection of top journals) and select journals from the Chartered Association of Business Schools (ABS) list (which includes specialized journals). From the latter, we included journals ranked 4* or 4 from the eight relevant subject areas, as well as those ranked 3 in the two areas most closely related to this review (strategy and management).

We then turned to our paper search process. We first used Web of Science (WoS) as our search tool (which checks each paper's title, abstract, and keywords); we then leveraged Google Scholar (which searches each paper's full text); and, finally, we employed a citation-based "snowball" technique to identify additional articles for inclusion in the sample (Hiebl, 2023). We set 1965-2024 as the publication date range, reflecting the seminal role of Stinchcombe's 1965 publication.

We created three sets of search terms (pertaining to firm age, BCAs, and phenomena in which BCAs commonly play roles) for querying with WoS. (Refer to **Table A2.1** for criteria details.) This WoS-based search returned 709 papers for initial screening. The goal of the screening process was to eliminate clear-cut mismatches and false positives by examining each paper's title and abstract. Our inclusion criteria required that papers address, investigate, illustrate, or inform the interplay between firm age and firm engagement with at least one of the three BCAs. We screened conservatively; if there was any potential for sample inclusion, we retained the paper for further evaluation. Screening reduced the WoS-identified results to 222 papers.

In the subsequent – and more stringent – assessment round, we manually evaluated the full text of each the remaining WoS-identified papers for sample eligibility. We used the same inclusion criteria as for screening, but applied them with heightened strictness. For example, if a paper addressed a boundary-change phenomenon like internationalization, but did not specifically consider acquisitions, alliances, or divestitures, it did not qualify for the sample. Likewise, when age was used as a control variable, the paper still had to offer some meaningful explanation or insight about firm age's role in the boundary-change context, or provide interpretation of its effects, to be eligible. 50 papers were identified for the final sample through this evaluation procedure.

We then used Google Scholar (GS) to identify sample candidates. This required a more parsimonious set of search terms (focused on the three BCAs and firm age) than used with WoS,

due to GS's full-text searching. Full-text searching enables GS to capture review-relevant papers that WoS may miss, but with the tradeoff of a large result set that is highly susceptible to false positives. After initial screening (top 300 results) and assessment (50 papers) – both using the same inclusion criteria as were applied with the WoS-identified papers – 28 more papers qualified.

Finally, additional paper candidates were flagged via the snowball technique and evaluated using the strictly-applied inclusion criteria. This surfaced another 20 qualified papers. In all, there are 98 papers in the final sample that represent 39 journals. These are listed in **Appendix 3**.

Sample Analysis: In this stage, we focused on evaluating and classifying the papers in the final sample, along with distilling and synthesizing their shared themes and collective insights. Our process was highly iterative and similar in spirit to grounded theory methods (Locke, 2001). We found three major themes in the research on firm age and BCAs, which, taken together, form what we refer to as the "**When-How-What" (WHW) framework**. Specifically, these themes include: (i) **When** does firm age play a role in firms' engagement with acquisitions, alliances, and divestitures; (ii) **How** does firm age stimulate and shape these BCAs; and (iii) **What** are the effects of firm age on these strategic activities and their outcomes. We used the WHW framework as an overarching organizing structure for categorizing and integrating our findings from the review.

In addition, each of the when-how-what components has its own set of thematic categories, specific to its focus, which served to facilitate analysis and insight integration. Our process for determining these category sets was similar across the WHW. For each component, we arrived at its final categories through an iterative coding process that combined deductive and inductive elements. We began with established typologies as initial sensitizing concepts, which provided a general orientation but were treated as provisional (Blumer, 1954; Bowen, 2006). As we reviewed the paper sample, we refined these categories – adding, deleting, and modifying as needed – to

reflect recurring themes or concepts in the data. For example, in the "when" component (which addressed the BCA implementation process), the six stages that emerged align with common characterizations of the acquisition, alliance, and divestiture processes (e.g., Calipha, Tarba & Brock, 2010; Kale & Singh, 2009; Gole & Hilger, 2008). Similarly, for the "how" component, we drew upon prior research that considered the mechanisms that can underpin firm age and its effects (e.g., Bakker & Josefy, 2018; Hannan et al., 1998; Ranger-Moore, 1997); for the "what" component, we leveraged a variety of BCA outcome-oriented typologies to inform our three-category structure (e.g., Gates & Very, 2003; McGrath, 2024; Zollo & Meier, 2008). Throughout, we recorded the frequency with which each category appeared across the sample; this yielded the distributions shown in **Figures 5-7**. Not all papers addressed all WHW components, and some papers addressed multiple categories within a single component.

Results & Discussion

State of the Literature

In this section, we provide characteristics of the paper sample and early insights into how researchers have examined the role of firm age in BCA execution. To start, **Figure 1** illustrates how frequently firm age is studied with each of the three BCA types in the sample. Firm age and acquisition are studied in 34 papers, firm age and alliance in 48 papers, and firm age and divestiture in 27 papers. While divestiture is studied with firm age less often than the others, its examination rate is higher than its lower representation in the wider strategy literature might have predicted (Feldman, 2021). The strong showing of firm age-alliance papers is due in part to papers examining the key role of partnerships for young firms aiming to overcome liabilities associated with their newness, including their paucity of resources, fledging reputations, and limited networks (Aharonson, Tzabbar, & Amburgey, 2016; Baum, Calabrese, & Silverman, 2000; Fernhaber & Li,

2013; Oliver, 2001). This result underscores the importance of our drawing upon a multidisciplinary set of journals, including those from entrepreneurship, to construct our sample.

***** Insert Figures 1, 2, 3 & 4 Here *****

As illustrated in **Figure 2**, a single paper may consider more than one BCA type. This occurs in 11 papers, or 13% of the 98-paper sample. Of these, two pairs – acquisition-divestiture and acquisition-alliance – were observed, whereas the alliance-divestiture pair was absent. None of the papers in the sample considered all three activity types. In a comprehensive empirical example of the acquisition-divestiture pair, Sivadasan et al. (2024) decomposed the growth paths of all US firms from 2004-2013 and examined the firms' use of acquisition, divestiture, and organic growth modes across five firm age-size categories. Two qualitative papers, Baker (1992) and Karim and Mitchell (2004), also examined firms' engagement with acquisitions and divestitures across phases of their lifecycles, but did so using deep single-firm case analysis. In an example of the acquisition-alliance pair, Shi and Prescott (2011) investigated the acquisition-alliance sequence patterns exhibited by specialty pharmaceutical firms throughout their different stages of development.

Figure 3 graphs the number of papers investigating firm age and BCAs by publication year and activity type. There are two distinct peaks in the results, in 2010 and 2020. The 2010 peak may represent increased researcher attention to the surge in restructuring that occurred in the aftermath of the 2008 financial crisis. The 2020 peak is driven by papers treating divestiture, which also had a high representation in 2019. This may reflect researcher response to the activist-led movement for corporate de-diversification that was gaining momentum in the years prior. Overall, **Figure 3** shows there has been heightened interest in the combination of firm age and BCAs from 2010 onward versus the previous decades, during which it appears to have been a niche topic.

Turning to firm age itself, **Figure 4** illustrates the four different "types" of firm age studied in

the sample (i.e., firm, business unit, acquired target, and strategic resource) by BCA type, as per paper count. (Since our focus in **Figure 4** is on the age of the firm and its components, we do not consider alliance age.) **Figure 4** shows that, while study of the firm's "overall" age dominates in the sample, unit age (which includes subsidiary age) was considered in 23 papers, acquired target age in 7, and strategic resource age in 5 papers. The data show that researchers addressed unit age most frequently in divestiture studies; target age, by definition, corresponds to acquisition studies. While strategic resource age has the lowest representation in the sample, the papers still illustrate the diversity of its application. Researchers considered the age of strategic resources as varied as brand in the context of acquisition (Biraglia et al., 2023), aircraft and the fleet in the setting of divestiture (Kim & Kuilman, 2013), and human capital in the context of JVs (Zajac et al., 1991). These four types illustrate the composite nature of a firm's age, and foreshadow how the role of firm age in BCA execution can vary with the type of firm age under examination.

In the sample, researchers used myriad approaches for operationalizing firm age. In the majority of papers, firm age was initialized with the firm's "birth," and measured as the number of years since founding year (Martinez-Campillo et al., 2018; Mata & Portugal, 2002; Rothaermel & Boeker, 2008) or incorporation year (Iurkov & Benito, 2020; Loderer & Waelchli, 2015; Zheng, Liu & George, 2010). Measuring firm age as the number of years since IPO is relevant to the BCA context since the IPO can facilitate financing for subsequent acquisitions (Arikan & Stultz, 2016; Celikyurt, Sevilir, & Shivdasani, 2010). Other research used the stage within the firm's life cycle to represent the extent of the firm's maturity or youth (Chiambaretto & Wassmer, 2019; Hite & Hesterly, 2001; Lavie & Singh, 2012; Pashley & Philippatos, 1990). For business unit and acquired target age, researchers additionally leveraged diverse operationalizations, such as the number of years that the unit has operated in the product market (Mitchell, 1994), the years that

the business has been associated with the focal firm (Chang & Singh, 1999), and the years since the foreign subsidiary has been owned or acquired by the focal firm, or has been created as a legal entity (Mata & Freitas, 2012; Rabbiosi & Santangelo, 2013; Kim, Hoskisson, & Zyung, 2019). Overall, while this diversity in operationalization limits comparability across papers, it does allow for meaningful alignment with the research context and the mechanisms under examination.

In the next three sections, findings pertaining to firm age's role in BCA execution are presented according to each dimension of the WHW framework (i.e., when, how, and what).

WHW Dimension #1: *When* firm age plays a role in boundary-changing activities

In our review, we found that researchers have examined the role of firm age in conjunction with six major stages of the BCA process: (1) motivation, investigation, and initiation; (2) target/partner/buyer search and selection; (3) deal design; (4) pre-completion implementation; (5) deal completion; (6) post-completion implementation and evaluation. **Figure 5** illustrates how many papers addressed each process stage for acquisitions, alliances, and divestitures; a single paper may address multiple stages. (Online **Table A4.1** lists the papers that underpin **Figure 5**.)

***** Insert Figure 5 Here *****

Overall, "post-completion implementation and evaluation" was the most-highly represented stage in the sample, with 37% of the paper count. This interest is likely reflective of the enormity of the firm's execution responsibilities (and potential sources of value destruction) that remain after the transaction's agreement has been finalized (e.g., Asgari et al., 2024; Karim & Mitchell, 2004; Mingo, 2013). The three stages studied with the next highest frequency, "motivation, investigation, and initiation," "target/partner/buyer search and selection," and "deal completion," accounted for 19%, 17%, and 17% of the paper count, respectively. Finally, the "deal design" stage captured 8% and "pre-completion implementation" had 1%. The low volume of papers

addressing "pre-completion implementation" may be attributed to researchers' (and practitioners') intense attention to firm age's role in its counterpart stage, "post-completion implementation."

In the first phase, "motivation, investigation, and initiation," one set of papers considers factors that drive firms to engage in BCAs, such as restructuring (Baker, 1992), IP commercialization (Pitsakis & Giachetti, 2020), liquidity constraints (Baker, 1992; Pashley & Philippatos, 1990) and new product market entry (Lee & Lieberman, 2010). Another collection pertains to the firm's assessment of the viability of the different activity options given its situation; this includes such factors as access to the public equity and debt markets (Celikyurt et al., 2010), cash availability (Mueller, 1969), and potential buyer (dis)interest (Chang & Singh, 1999). A final theme pertains to choice; this encompasses the selection of which type of BCA to use (Mitchell, 1994; Sivadasan, et al., 2024), and, within the activity type itself, the choice of approach (e.g., explorative or exploitative, Krammer, 2016, Yamakawa et al., 2011; diversifying or focusing, Arikan & Stultz, 2016). In this phase, papers addressing the role of firm age in alliances were the most-frequently represented activity type (50% of paper count associated with this phase, as shown in **Figure 5**) relative to the number of papers associated with the other two activity types.

The second phase identified in the review, "target/partner/buyer search and selection," included papers that address activity-specific due diligence issues (such as partner compatibility and the potential for cultural or organizational differences between the firm and the counterparty, Lavie & Singh, 2012; Newburry & Zeira, 1997), as well as the selection of the transaction's counterparty and its characteristics (such as public versus private acquisition targets, Hovakimian & Hutton, 2010, Shen & Reuer, 2005; or the selection of the target for divestiture, Kim & Kuilman, 2013; Konara & Ganotakis, 2020). Papers pertaining to the interplay between firm age and divestiture execution (45% of the papers associated with this phase) were the most prevalent, relative to the

other two activity types, in this phase category.

The third phase category revealed in the review, "deal design," encompassed papers that addressed issues associated with the negotiation and structuring of the transaction agreement. These included: valuation and its uncertainties (Ransbotham & Mitra, 2010; Shen & Reuer 2005), financing and method of payment (Baker, 1992; Hovakimian & Hutton 2010; Owen & Yawson, 2010), and degree of ownership (Wilkinson et al., 2008; Xie, 2017). 54% of this category's paper count (see **Figure 5**) was associated with the acquisition activity type.

Papers associated with the fourth phase category, "pre-completion implementation" addressed the tie-cutting between parent and unit that is a necessary step before divestiture completion (Feldman, 2014; Mohr, Konara, & Ganotakis, 2020). Accordingly, this category included strictly divestiture-related papers.

"Deal completion," the fifth category identified in the review, included papers pertaining to "deal close", or the finalization of the activity's agreement. Papers examining firm age's impact on acquisition completion (Arikan & Stultz, 2016; Loderer & Waelchli, 2015), alliance formation (Kumar et al., 2020; Sakakibara, 2002), and divestiture completion (Ruhnka, Feldman, & Dean, 1992; Mitchell, 1994) were all represented. Given deal completion's shared relevance to all three BCA types, papers associated with acquisitions (32% of the category's paper count), alliances (32%), and divestitures (38%) were similarly represented in the category.

In the sixth phase category, "post-completion implementation and evaluation," the theme of post-acquisition integration – and its execution, management, and challenges – was strongly represented throughout the papers (Boyacıoğlu, Özdemir, & Karim, 2024; Fowler & Schmidt, 1989; Liou & Rao-Nicholson, 2019; Mingo, 2013). Another clear theme encompassed the development and management of the alliance/JV entity and its value-creating processes (Fredrich,

Bouncken, & Tiberius, 2022; Li, Poppo, & Zhou, 2010; Rabbiosi & Santangelo, 2013), as well as the evaluation of its performance and effects on the partner firms (Asgari et al., 2024; Lin, Yang, & Arya, 2009; Lu & Xu, 2006). Papers pertaining to the relationship between firm age and alliance execution were the most strongly represented in the category, accounting for 59% of its paper count as illustrated in **Figure 5**. Papers associated with firm age and divestiture were more limited (8%), and addressed activities, such as reconfiguration, that were catalyzed directly by the divestiture's completion (Karim & Mitchell, 2004).

Taken together, these findings showcase the wide span of firm age's role across the entirety of the acquisition, alliance, and divestiture execution processes. In the next section, we build upon these results and elucidate how firm age impacts these processes.

WHW Dimension #2: *How* firm age impacts boundary-changing activities

In our review of the literature, we found that researchers have considered numerous theoretical explanations for how firm age may influence acquisition, alliance, and divestiture execution. The top seven most-frequently invoked explanations were: (1) legitimacy and status, (2) experience and learning, (3) resource access, (4) resource and process development, (5) inertia and (in)flexibility, (6) transparency and information availability, and (7) cohesiveness and compatibility. (See **Figure 6**; underlying papers are provided in Appendix **Table A4.2**.) Examples of other, less-frequently considered age-related mechanisms in the sample included: risk adversity (Bouncken & Fredrich, 2016; Ruhnka et al., 1992), managerial self-interest (Haveman, 1995), and power (Asgari et al., 2024). A single paper may draw upon multiple theoretical explanations.

***** Insert Figures 6 & 7 Here *****

As shown in **Figure 6**, of the top-seven explanations, "experience and learning" was the most-frequently used (27% of the paper count). At the other end of the spectrum, "cohesiveness and

compatibility" (8%) and "transparency and information availability" (6%) were the least-commonly employed of the top-seven categories. The representation of the middle-four explanations in the paper count was approximately equal, ranging from 14% to 16%, respectively.

Examining the review's results for the "how" in conjunction with those for the "when" from the previous section is also instructive. Since these two dimensions have 13 categories between them, we used a heat map to facilitate visualization and interpretation (See **Figure 7**; Appendix **Table A4.3** lists the papers that underpin **Figure 7**.) This chart illustrates the most popular how-when combination studied by researchers was "experience and learning" and "post-completion implementation" (25 papers). For the other "how" categories, researchers most commonly studied them in conjunction with the "post-completion implementation" stage, with two exceptions. These two combinations were "resource access" and "motivation, investigation, and initiation" (9 papers), and "transparency and information availability" and "deal completion" (5 papers).

In the case of "legitimacy and status," the explanations for how firm age plays a role in acquisition, alliance, and divestiture execution have a strong external orientation. Here, the perceptions of outside stakeholders – such as potential partners, customers, investors, and acquirers – are crucial (Aharonson et al., 2016; Morgan & Anokhin, 2023; Stuart, 2000). Young firms have not typically had the opportunity to build the reputations, attain the status levels, or achieve the legitimacy enjoyed by its older counterparts. In response, young firms may engage in alliances with older, established firms in an effort to signal endorsement and increase stakeholders' perceptions of their own legitimacy (Baum et al., 2000; Lu & Xu, 2006). To this end, Aharonson et al. (2016) found that a startup's alliances with foreign multinational corporations benefit the startup's status in its domestic network and, accordingly, its subsequent alliance activity. **Figure 6** illustrates researcher interest in applying legitimacy-based age explanations in alliance execution

research, such that the alliance activity type represents 60% of the paper count in this category.

Research in the "experience and learning" category frequently used firm age as a proxy for firm experience and the accumulation of knowledge. Liou and Rao-Nicholson (2019) applied this logic towards firm capability development, suggesting that older firms would possess strong post-acquisition integration capabilities; other research applied it towards explaining the rising rate of spinoffs with firm age, as these older firms had accumulated sufficient knowledge that a spinoff could draw upon (Klepper & Sleeper, 2005; Capone et al., 2019). Zhang et al. (2024) leverage firm age to capture the extent of the firm's learning needs, which are heightened for young firms, that in turn impacts the desire for partnerships to address them. Park et al. (2004) suggest that the age-as-experience proxy is also used by investors, who are found to favor alliances of more experienced versus younger e-commerce firms. As per **Figure 6**, papers pertaining to alliances had the highest representation in this category (49% of papers).

A key theme of the research in the "resource access" category addressed the vulnerabilities that young firms face due to their lack of resources, as well as the means through which they may overcome them (Baum et al., 2000; Delmar et al., 2003; Mata & Portugal, 2002; Yamakawa et al., 2011). Since young, resource-constrained firms have neither the cash nor the ability to tap the capital markets to fund acquisitions, alliances are a strong option for filling their resource gaps (Chang, 2008; Owen & Yawson, 2010; Baum et al., 2000). Moreover, Pashley and Philippatos' (1990) findings suggest that old firms, such as those facing decline, may also be plagued by resource access issues, which they may have incurred as a consequence of aging's liabilities. The strength of these research interests is illustrated in **Figure 7**, which shows that "resource access" was studied most frequently in combination with the "motivation, investigation, and initiation" phase of the activity process.

Within the "resource and process development" category, one set of papers drew upon the connection between the aging process and idiosyncratic resource development (Chang & Singh, 1999; Mohr et al. 2020). In this view, older business units, as they have had more time than younger ones to more deeply integrate with the firm through skill transfer and resource sharing, will have developed more firm-specific idiosyncratic resources. These idiosyncratic assets, in turn, increase transaction costs and limit buyer interest. However, Mohr et al. (2020) highlight that in the context of foreign subsidiaries, older units have had the time to develop their own firm-specific advantages, which will better position them for success upon divestiture. Another collection of papers examines how, with age, firms can advantageously develop their formal and informal partnership networks, and do so more calculatedly than they did during youth (during which time the pressing need to address resource scarcity took precedence over intentionality) (Hite & Hesterly, 2001; Sakakibara, 2002). While the alliance activity type had the highest representation in this category (41% of the paper count, **Figure 6**), acquisition (23%) and divestiture (36%) also had a strong presence, suggesting the ready applicability of this resource development-based explanation for firm age across the three BCA types.

The "inertia and (in)flexibility" category highlights the extent and magnitude of some of the liabilities that older firms can face, from structural rigidities to deleterious bureaucracies to path dependencies, and which can impair their abilities to adapt and change (Demirkan et al., 2013; Morgan & Anokhin, 2023; Newburry & Zeira, 1997; Rothaermel & Boeker 2008). For example, inertia may cause reluctance to engage in acquisition or divestiture execution (Owen & Yawson, 2010; Shimizu & Hitt, 2005). Loderer and Waelchli (2015) suggest that integrating a young acquisition target versus an older one may be easier due to the structural flexibility and malleable organizational culture that is characteristic of youth. Bouncken et al. (2021) find alliances can be

a valuable component of older firms' "anti-aging" recipes, as the new mutually-created knowledge in an alliance can break rigid sensemaking patterns. In keeping with these topics, papers pertaining to acquisitions and alliances were equally represented in this category (each at 41%, **Figure 6**) and were most typically associated with the "post-completion implementation" stage (**Figure 7**).

Research in the "transparency and information availability" category addresses how firms, as they age, have the opportunity to develop track records and share (deliberately or not) information about themselves and their businesses to external stakeholders. The consequent visibility can help, for instance, reduce uncertainty in investors' valuations of older firms (Ransbotham & Mitra, 2010; Zheng et al., 2010), as well as mitigate information asymmetry problems for potential acquirers (Shen & Reuer, 2005). For example, Mitchell (1994) evidenced that divestiture rates are higher (vs. dissolution rates) for older business units, since they have an established track record (which is absent in younger businesses) that potential buyers can assess. This role of firm age was equally represented in the category for all three BCAs (**Figure 6**), and most frequently identified in combination with the "search and selection" and "deal completion" activity stages (**Figure 7**).

In the case of "cohesiveness and compatibility," firm age serves as an indicator of organizational similarity. One logic suggests that when the firm and its counterparty share a common age or life stage, this compatibility could lead to positive outcomes between, for example, an acquirer and its target (Mingo, 2013), or a firm and its alliance partner (Luo & Deng, 2009; Mitsuhashi & Greve, 2009). However, some research has found age heterogeneity amongst activity participants to be beneficial; for example, Bertrand and Lumineau (2016) evidenced that it can increase the longevity of multi-partner alliances. Yet, Kim and Kuilman (2013) suggest that age heterogeneity within the firm (e.g., amongst its business units or strategic resources) can be difficult to manage due to the disparate (or even contradictory) demands that different lifecycle

stages present. They propose that, while older firms may have honed the skills to handle these complexities and reap the benefits of its age heterogeneity, younger firms may struggle and turn to divestiture to reduce it. As per **Figure 6**, research pertaining to alliances was highly represented in this category (86% of its paper count).

WHW Dimension #3: *What* the effects of firm age are on BCAs and their outcomes

Our review identified three primary categories of outcomes associated with the role of firm age in acquisition, alliance, and divestiture execution: financial, operational, and BCA-oriented.

Financial outcomes serve as key indicators of a firm's financial performance. These encompassed such measures as revenue (Baum et al., 2000; Gimenez-Fernandez et al., 2020; Stuart, 2000); profitability (e.g., ROE, Bouncken & Fredrich, 2016; ROS, Feldman, 2014; ROA, Lin et al., 2009, Yamakawa et al., 2011), and market-based measures (e.g., Tobin's q, Shi & Prescott, 2011; stock price performance, Arikan & Stultz, 2016; Park et al., 2004; Pashley & Philippatos, 1993). Operational outcomes capture the effectiveness of the firm's managerial and internal processes, as well as its overall business functioning. These included learning (Kim et al., 2012; Rabbiosi & Santangelo, 2013; Zahra et al., 2000), innovation (Luo & Deng, 2009; Protogerou et al., 2017), new product development (Rothaermel & Deeds, 2006), employment (Baum et al., 2000; Haveman, 1995), and extent of international exposure (Fernhaber & Li, 2013; Giarratana & Torrisi, 2010). BCA-oriented measures pertain to the execution of the acquisition, alliance, and divestiture processes themselves, such as the rate of acquisition (Arikan & Stultz, 2016; Celikyurt et al., 2010), alliance duration (Asgari et al., 2024; Bertrand & Lumineau, 2016), structural changes in the firm's alliance portfolio (Demirkan et al., 2013; Hite & Hesterly, 2001), and patterns of divestiture, alliance, and acquisition activity (Baker, 1992; Shi & Prescott, 2011).

Our review did not surface clear or consistent effects of firm age on these outcomes. This

pattern mirrors organizational ecology's early mixed findings on age dependence in organizational mortality (Hannan, 1998; Hannan et al., 1998), and echoes more recent work that has documented the heterogeneous consequences of firm aging (Bakker & Josefy, 2018; Coad, 2018).

However, our review did illuminate multiple ways through which firm age exerts its influence. These include acting directly or through moderation, operating at the firm or unit level, and working through mechanisms like inertia or legitimization (Demirkan et al., 2013; Lu & Xu, 2006). The review also highlighted myriad contingencies, both internal (e.g., firm size, Sivadasan et al., 2024) and external (e.g., technological change, Lavie & Singh, 2012; environmental dynamism, Lin et al., 2009), that condition the impact of age on BCA outcomes. The importance of business context was further evident in the diversity of industries represented across the sample, including venture capital (Ruhnka et al., 1992), biotechnology (Luo & Deng, 2009), semiconductors (Stuart, 2000), motion pictures (Vandaie & Zaheer, 2014), and liner shipping (Mitsuhashi & Greve, 2009).

Future Research Directions

The above analysis illuminates the progress researchers have made in deciphering the "when," "how," and "what" of firm age's role in BCA execution. Below, we share our recommendations, derived from the review, for future research on firm age and BCAs. We organize our suggestions according to the four developments, described earlier, which are unfolding in each of the firm age and BCA literatures. The first two focus on new age-based phenomena and their impact on BCAs; the third and fourth consider the role of firm age in two growing areas of BCA execution.

(1) Opportunities pertaining to "age-defying" firms

We previously highlighted the emergence of two types of "age-defying" firms: old firms that bear the hallmarks of young firms, and young firms that carry the distinguishing characteristics of old firms. Age-defying firms are fundamentally tied to BCA execution; the young-looking old

firms are born out of boundary-change activity, and the old-looking young firms are positioned to engage in acquisitions at a level and volume that is highly atypical of their youth.

The review revealed the extensivity of the "how" – the many ways that firm age may influence BCAs (**Figures 6** and **7**). Yet, age-defying firms are subject to a particularly complex circumstance for their age-related processes, as they are concurrently exposed to the liabilities – and benefits – associated with their dual ages. An unwelcome scenario for an age-defying firm is to be simultaneously saddled with the worst of the vulnerabilities of its newness and senescence, and without the benefits of either. How firms may navigate these dueling aging processes and how the mechanisms of youth and maturity may interact are open questions. As a point of departure, we suggest: ***What are the effects of firms' age-defiance on their BCA execution and performance?***

The review surfaced several precedents for researchers to consider. For example, the characteristics of youth that mark young-looking old firms may bring advantages in BCA execution. The clock reset that young-looking old firms received may infuse flexibility, eliminating the inertia and structural rigidities of age that could normally impair post-acquisition integration or constrain choice of BCA type (Ardito et al., 2019; Newburry & Zeira, 1997). Additionally, their seemingly-young (and thus inexperienced) appearance may advantage them during due diligence and negotiations, as potential partners, sellers, and buyers may underestimate their savviness.

A key differentiator of old-looking young firms is that they do not suffer from the scarcity of resources that typifies youth. Hence, the BCAs of these firms may see fewer alliances and more acquisitions than common for their age. However, old-looking young firms have not had the time to hone the capabilities needed to smoothly execute the big deals that their ample wallets allow – and thus the value destruction that is too-often associated with M&A could be amplified for these firms (Liou & Rao-Nicholson, 2019). Yet, old-looking young firms may have achieved the scale

to be positioned to divest – and they may do more effectively than their old-firm counterparts, since the divestiture execution difficulties associated with emotional attachment and organizational embeddedness that come with age will be absent (Feldman, 2014; Kim et al., 2019).

Managerial implications: Age-defying firms' inherent dualities will present unique leadership challenges. It is possible that the CEO's age may play an outsized role in influencing age-defying firms (Devers et al., 2020; Huber, 1991; Stinchcombe, 1965). Having a seasoned, mature CEO at the helm of a young firm appearing older may make all the difference as it simultaneously navigates the liabilities of both newness and aging; a young CEO may be the best fit for an old firm appearing younger, such that the young CEO may help the old firm embrace the opportunities of youth that its aged-self may overlook.

(2) Opportunities pertaining to "age-amalgamated" firms

Earlier, we introduced the phenomenon of age-amalgamated firms, which are comprised of age-diverse parts. As evidenced in our review, firm age is most often treated monolithically, wherein the whole of the firm is represented by a single age that is commonly initialized at birth (**Figure 4**). However, this masks the extent of the age-based diversity of the firm's components and strategic resources (Haveman, 1995; Kim & Kuilman, 2015). Furthermore, each piece has its own timeclock (Amburgey et al., 1993), which could be based upon, for example, when it became part of the firm (be it via organic or inorganic means) or when it was first established as an entity. As a result, a firm that is middle-aged according to its own founding year may, in fact, have a diversity of ages (older and younger) represented amongst its component units (e.g., Baker, 1992). This, in turn, could have ramifications for how and when the firm experiences age-related liabilities, as well as for how its age-connected processes, such as learning and legitimacy-building, unfold (Biraglia et al., 2023; Kim et al., 2012; Mingo, 2013).

While the review showcased a small set of papers that that have begun to explore the impact of age-based differentials within the firm on its BCA execution (e.g., Kim & Kuilman, 2015; Kim et al., 2012; Mingo, 2013), our understanding of age-amalgamated firms has not kept pace with their pervasiveness. Thus, we propose as a starting point: ***What is the impact of firms' age amalgamation on their BCA execution and outcomes?*** We expect that age amalgamation may impede some processes (such as skill transfer from a recently-acquired target across the firm during post-completion implementation, or the economization of managerial attention in a context involving concurrent execution of multiple BCAs) and perhaps advantage others (such as the target unit's separation from its siblings during divestiture). In tandem, this raises the issue of ***How should firms' age amalgamation be measured for the BCA context?*** The literature has offered possibilities (e.g., the precedents set by strategic resource and human capital tenure distribution measures; Haveman, 1995; Kim & Kuilman, 2015), along with different conceptualizations (e.g., unit age-since-acquired vs. age-since-inception). Optimal measurement approaches will likely vary with the "when," "how," and "what" of the firm age-BCA relationship of focus.

Managerial implications: Leaders of age-amalgamated firms may find that one-size-fits-all processes and policies are less effective, especially in cases with larger age-based disparities. A diversity of ages may require management approaches tailored to different age brackets; for example, young business units may embrace a shift in firm strategy that was catalyzed by a series of acquisitions, whereas mature units may struggle to adapt to the change.

(3) Opportunities pertaining to the holistic view of boundary-changing activity execution

We previously highlighted the growing "holistic view" of firm BCAs (Feldman, 2020; Kochura et al., 2022), which encourages consideration of how these activities may impact one other, and whether their interplay enhances or undermines intended execution outcomes. Applying this

perspective when examining BCAs is especially germane to the context of firm age, given the extent and depth through which firm age influences their selection, implementation, and effects. However, in our review, we found that application of the holistic view appears to be in its infancy; two activity types were represented together in only 13% of the paper sample, whereas no papers considered all three BCAs (**Figure 2**). This prompts the research question: ***How does the firm's combination of acquisitions, alliances, and divestitures change with firm age?***

Addressing this question could motivate research streams that consider to what extent firms balance or focus their "mix" of these BCAs as they mature, and, in the case of focusing, which activity dominates at which age. Furthermore, researchers could examine how the firm's initial resource endowment, in conjunction with imprinting effects, may subsequently impact the firm's mix of BCAs as it ages (Baum et al., 2000; Le Mens et al., 2011; Stinchcombe, 1965). Several papers in this review's sample provide a good starting point for investigating these issues. A small set of single-firm studies provides a qualitative look at firms' long-term BCA execution (Baker, 1992; Karim & Mitchell, 2004; Lavie & Singh, 2012), although none of these examine BCA execution in combination. Using a quantitative approach, Shi and Prescott (2011) examine the firms' use of acquisitions and alliances across lifecycle stages. Looking forward, sequence analysis may serve as a good starting point for characterization; researchers will also need to determine how best to operationalize and measure the firm's BCA mix when applying the holistic view.

Another suggested research area targets what the holistic view of BCAs may reveal about the role of firm age in their execution and outcomes, and what the accordant implications for their age-related processes may be. The review indicated that this is a research gap; for example, studies in the sample focused on firm financial outcomes typically did not examine or even control for additional BCAs beyond the focal type (e.g., Arikan & Stulz, 2016). Thus, we recommend: ***What***

is the relationship between the mix of BCAs and performance in the aging firm?

Within this line of inquiry, a pressing issue is whether and when the age-related processes activated within each of the firm's BCAs reinforce or contradict one another. In the broader strategic management literature, some studies (which do not address firm age specifically) offer mixed insights. For example, one collection of studies indicates that the firm's experience in performing one type of BCA can benefit its execution of another (Bingham et al., 2015; Doan et al., 2018; Zollo & Reuer, 2010). Other scholars have proposed that successful BCA capability transfer is most strictly applicable to the nuts-and-bolts deal "mechanics" of the BCA transactions (McGrath & Nerkar, 2024). However, the extent and variability of the consonance and dissonance amongst the acquisition, alliance, and divestiture execution processes throughout the firm's lifecycle is an open issue. From methodological perspective, a set-theoretic configurational approach (e.g., Bouncken & Fredrich, 2016) offers one way to start to decode how the combination of firm age and the firm's mix of the three BCA types influences firm performance.

Managerial implications: Application of the holistic view offers the promise of strategic guidance: what combinations of acquisitions, alliances, and divestitures firms should deploy for optimal outcomes at different ages. Should research surface a "formula" for BCA combinations for different lifecycle stages, managers can then prepare their organizations – strategically, operationally, and financially – to engage in the specified activities, as well as bolster defenses against any anticipated risks associated with their execution.

(4) Opportunities pertaining to divestiture execution

Our analysis showed that, while divestiture has been represented in the firm age and BCA literature over the past decades, its recent treatment has been sporadic and somewhat limited (**Figures 1** and **3**). Our assessment of the "when" dimension in the WHW framework illuminated

two aspects of this divestiture-related work. First, divestiture was the only activity type represented in the "pre-completion implementation" stage, suggesting its importance to that process stage (**Figure 5**). Second, divestiture's examination in the "post-completion implementation" stage was a process-wide low for divestiture studies, evidencing a research opportunity. Taken together, these results indicate that greater research focus on the role of firm age in divestiture execution is needed, and that exploring the pre- and post-completion stages appears promising. To motivate this line of research, we propose: ***How do firm and unit age influence divestiture execution during the pre-completion implementation stage?*** and ***How can these insights be leveraged to improve divestiture execution in the post-completion stage?***

One explanation for the subdued attention to the firm age-divestiture relationship in the post-completion stage may be due to a misconception that divestiture execution ends with unit separation. To the contrary, when the unit is jettisoned, it leaves behind a resource void; some of these lost resources may have been connected to or interdependent with the wider firm (de Figueiredo et al., 2019; Feldman, 2014; Mohr et al., 2020). When these connections are severed, the wound must be treated during the post-completion implementation stage (Friedmann & McGrath, 2025; Larsen, Manning, & Pedersen, 2013; von Krough & Roos, 1994). Firm age may play a role in the healing process, such that age (with its accordant inflexibilities and rigidities) may similarly dictate healing's speed and difficulty. Moreover, firm age may influence the treatment plan, be it an internal (e.g., reconfiguration) or external (e.g., temporary alliance) prescription (Karim & Mitchell, 2004). These issues have direct bearing on the success of the divestiture execution process; failing to "stop the bleeding" incurs value loss.

Development of a treatment plan could begin before separation, as could organizational efforts to mitigate the severity of the resource void's effects. These pre-completion preemptive efforts

would require an assessment of the links and interdependencies between the target unit and firm – which, as early research has indicated, can be opaque (Feldman, 2014; Larsen et al., 2013). Both the firm's age and the unit's age (the time it has been part of the firm) could have bearing on the scope, depth, and visibility of these interconnections and on the repercussions of their severance.

Managerial implications: This proposed research stream underscores that managers should expect and plan for a post-divestiture recovery process. Firm age may dictate the severity of the divestiture-driven wounds and the difficulties of the healing process. However, managers can proactively prepare for divestiture's injuries, by both developing a treatment plan and putting mechanisms in place before deal closure to mitigate the consequences. Managers in the divesting firm can use the target unit's "tenure" age as a guide to help detect where the greatest pain points associated with the unit's separation may lie.

Conclusion

The difficulties associated with acquisition, alliance, and divesture execution, along with the value destruction that is all too frequently associated with them, are long-standing, pernicious issues in corporate strategy. The age of the firm – and the processes that aging represents – is intertwined with the firm's implementation of these BCAs. Recent research advances and shifting perspectives about firm age and BCAs encourage a reinvigorated examination of their relationship. We aimed to help meet this need. Through our systematic review of the firm age and BCA literatures, we discerned the WHW (when, how, what) framework; this served to organize and catalyze what is known about the role of firm age in acquisition, alliance, and divestiture execution. Using themes and insights distilled from the review, we developed targeted recommendations for future research and practice. We advanced these suggestions with a view toward accelerating progress on surmounting the "ageless" challenges posed by firms' BCA implementation.

References

Note: Papers marked with an asterisk are part of the review's paper sample. The full paper sample used in the review is available online in **Appendix 3**.

*Aharonson, B. S., Tzabbar, D., & Amburgey, T. L. (2016). Do they know something we don't? Endorsements from foreign MNCs and domestic network advantages for start-ups. *Global Strategy Journal*, *6*(1), 31-49.

Aldrich, H., & Auster, E. R. (1986). Even dwarfs started small: Liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, *8*, 165-198.

*Ardito, L., Petruzzelli, A. M., & Albino, V. (2019). The influence of alliance ambidexterity on innovation performance and the moderating role of firm age. *IEEE Transactions on Engineering Management*, *68*(2), 370-377.

*Arikan, A. M., & Stulz, R. M. (2016). Corporate acquisitions, diversification, and the firm's life cycle. *Journal of Finance, 71*(7), 139-194.

Amburgey, T. L., Kelly, D., & Barnett, W. P. (1993). Resetting the clock: The dynamics of organizational change. *Administrative Science Quarterly*, *38*(1), 51-73.

Anand, B. N., & Khanna, T. (2000). Do firms learn to create value? The case of alliances. *Strategic Management Journal*, *21*(3), 295-315.

*Asgari, N., Lévesque, M., Soh, P. H., & Subramanian, A. M. (2024). It's time to break up: Dynamics surrounding young-established firm alliance duration. *Production and Operations Management*, https://doi.org/10.1177/10591478241279551.

Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, *43*(5), 909-924.

*Baker, G. P. (1992). Beatrice: A study in the creation and destruction of value. *Journal of Finance, 47*(3), 1081-1119.

Bakker, R. M., & Josefy, M. (2018). More than just a number? The conceptualization and measurement of firm age in an era of temporary organizations. *Academy of Management Annals*, *12*(2), 510-536.

Balasubramanian, N., & Lee, J. (2008). Firm age and innovation. *Industrial and Corporate Change*, *17*(5), 1019-1047.

Barkema, H. G., & Schijven, M. (2008). How do firms learn to make acquisitions? A review of past research and an agenda for the future. *Journal of Management*, *34*(3), 594-634.

Barron, D. N., West, E., & Hannan, M. T. (1994). A time to grow and a time to die: Growth and mortality of credit unions in New York City, 1914-1990. *American Journal of Sociology*, *100*(2), 381-421.

*Baum, J. A., Calabrese, T., & Silverman, B. S. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal*, *21*(3), 267-294.

Bennett, V. M., & Feldman, E. R. (2017). Make room! Make room! A note on sequential spinoffs and acquisitions. *Strategy Science*, *2*(2), 100-110.

Berry, H. (2010). Why do firms divest?. *Organization Science*, *21*(2), 380-396.

*Bertrand, O., & Lumineau, F. (2016). Partners in crime: The effects of diversity on the longevity of cartels. *Academy of Management Journal*, *59*(3), 983-1008.

Bingham, C. B., Heimeriks, K. H., Schijven, M., & Gates, S. (2015). Concurrent learning: How firms develop multiple dynamic capabilities in parallel. *Strategic Management Journal*, *36*(12), 1802-1825.

*Biraglia, A., Fuchs, C., Maira, E., & Puntoni, S. (2023). When and why consumers react negatively to brand acquisitions: A values authenticity account. *Journal of Marketing*, *87*(4), 601-617.

Blumer, H. (1954). What is wrong with social theory? *American Sociological Review, 19*, 146-58.

*Bouncken, R. B., & Fredrich, V. (2016). Business model innovation in alliances: Successful configurations. *Journal of Business Research*, *69*(9), 3584-3590.

*Bouncken, R., Ratzmann, M., & Kraus, S. (2021). Anti-aging: How innovation is shaped by firm age and mutual knowledge creation in an alliance. *Journal of Business Research*, *137*, 422-429.

Bowen, G. A. (2006). Grounded theory and sensitizing concepts. *International Journal of Qualitative Methods, 5*(3), 12-23.
*Boyacıoğlu, B., Özdemir, M. N., & Karim, S. (2024). Acqui-hires: Redeployment and retention of human capital post-acquisition. *Strategic Management Journal*, *45*(2), 205-237.
Bruderl, J., & Schussler, R. (1990). Organizational mortality: The liabilities of newness and adolescence. *Administrative Science Quarterly*, *35*(4), 530-547.
Calipha, R., Tarba, S., & Brock, D. (2010). Mergers and acquisitions: A review of phases, motives, and success factors. *Advances in Mergers and Acquisitions, 9*, 1-24.
*Capone, G., Malerba, F., & Orsenigo, L. (2019). Spinoffs in context: entry and performance across different industries. *Industrial and Corporate Change*, *28*(2), 259-282.
Capron, L., Mitchell, W., & Swaminathan, A. (2001). Asset divestiture following horizontal acquisitions: A dynamic view. *Strategic Management Journal*, *22*(9), 817-844.
Carr, J. C., Haggard, K. S., Hmieleski, K. M., & Zahra, S. A. (2010). A study of the moderating effects of firm age at internationalization on firm survival and short-term growth. *Strategic Entrepreneurship Journal*, *4*(2), 183-192.
*Celikyurt, U., Sevilir, M., & Shivdasani, A. (2010). Going public to acquire? The acquisition motive in IPOs. *Journal of Financial Economics, 96*(3), 345-363.
*Chang, K. (2008). The strategic alliance of the biotechnology firm. *Applied Economics*, *40*(23), 3089-3100.
*Chang, S. J., & Singh, H. (1999). The impact of modes of entry and resource fit on modes of exit by multibusiness firms. *Strategic Management Journal*, *20*(11), 1019-1035.
Chen, J., Elliott, M., & Koh, A. (2023). Capability accumulation and conglomeratization in the information age. *Journal of Economic Theory*, *210*, 105647.
*Chiambaretto, P., & Wassmer, U. (2019). Resource utilization as an internal driver of alliance portfolio evolution: The Qatar Airways case (1993–2010). *Long Range Planning*, *52*(1), 51-71.
Choi, Y. R., & Shepherd, D. A. (2005). Stakeholder perceptions of age and other dimensions of newness. *Journal of Management*, *31*(4), 573-596.
Coad, A. (2018). Firm age: a survey. *Journal of Evolutionary Economics*, *28*, 13-43.
Coad, A., Daunfeldt, S. O., Hölzl, W., Johansson, D., & Nightingale, P. (2014). High-growth firms: Introduction to the special section. *Industrial and Corporate Change*, *23*(1), 91-112.
Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, *35*(1), 128-152.
de Figueiredo, R., Rawley, E., & Rider, C. (2015). Why are firms rigid? A general framework and empirical tests. *Organization Science*, *26*(5), 1502-1519.
*Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, *18*(2), 189-216.
*Demirkan, I., Deeds, D. L., & Demirkan, S. (2013). Exploring the role of network characteristics, knowledge quality, and inertia on the evolution of scientific networks. *Journal of Management*, *39*(6), 1462-1489.
Devers, C. E., Wuorinen, S., McNamara, G., Haleblian, J., Gee, I. H., & Kim, J. (2020). An integrative review of the emerging behavioral acquisition literature: Charting the next decade of research. *Academy of Management Annals*, *14*(2), 869-907.
Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, *35*(12), 1504-1511.
Doan, T. T., Sahib, P., & van Witteloostuijn, A. (2018). Lessons from the flipside: how do acquirers learn from divestitures to complete acquisitions?. *Long Range Planning*, *51*(2), 252-266.
Dranikoff, L., Koller, T., & Schneider, A. (2002). Divestiture: strategy's missing link. *Harvard Business Review, 80*(5), 74-83.
Erl, L., Kiesel, F., Koenigsmarck, M., & Schiereck, D. (2023). Performance effects of sell-offs and the role of sell-off experience. *Quarterly Review of Economics and Finance*, *88*, 244-257.

*Feldman, E. R. (2014). Legacy divestitures: Motives and implications. *Organization Science, 25*(3), 815-832.
Feldman, E. R. (2020). Corporate strategy: Past, present, and future. *Strategic Management Review*, *1*(1), 179-206.
Feldman, E. R. (2021). 'Restructuring and divestitures,' in I. Duhaime, M. Hitt and M. Lyles (eds), *Strategic Management: State of the Field and Its Future.* Oxford University Press: New York, NY, pp. 153–166.
Feldman, E. R., & McGrath, P. J. (2016). Divestitures. *Journal of Organization Design, 5*, 1-16.
Ferrigno, G., Martin, X., & Battista Dagnino, G. (2024). Explaining the interplay of value creation and value appropriation in strategic alliances: A developmental perspective. *International Journal of Management Reviews, 26*(2), 232-253
*Fernhaber, S. A., & Li, D. (2013). International exposure through network relationships: Implications for new venture internationalization. *Journal of Business Venturing*, *28*(2), 316-334.
Fichman, M., & Levinthal, D. A. (1991). Honeymoons and the liability of adolescence: A new perspective on duration dependence in social and organizational relationships. *Academy of Management Review*, *16*(2), 442-468.
*Fowler, K. L., & Schmidt, D. R. (1989). Determinants of tender offer post-acquisition financial performance. *Strategic Management Journal*, *10*(4), 339-350.
*Fredrich, V., Bouncken, R., & Tiberius, V. (2022). Dyadic business model convergence or divergence in alliances?–A configurational approach. *Journal of Business Research*, *153*, 300-308.
Freeman, J., Carroll, G. R., & Hannan, M. T. (1983). The liability of newness: Age dependence in organizational death rates. *American Sociological Review*, *48*(5), 692-710.
Friedmann, J.-C., & McGrath, P. J. (2025). Rebound relationships: Remediating divestiture-instigated resource voids through alliances. Working paper.
Gates, S., & Very, P. (2003). Measuring performance during M&A integration. *Long Range Planning, 36*(2), 167-185.
*Gimenez-Fernandez, E. M., Sandulli, F. D., & Bogers, M. (2020). Unpacking liabilities of newness and smallness in innovative start-ups: Investigating the differences in innovation performance between new and older small firms. *Research Policy*, *49*(10), 104049.
*Giarratana, M. S., & Torrisi, S. (2010). Foreign entry and survival in a knowledge-intensive market: Emerging economy countries' international linkages, technology competences, and firm experience. *Strategic Entrepreneurship Journal*, *4*(1), 85-104.
Gole, W. J., & Hilger, P. J. (2008). *Corporate divestitures: A mergers and acquisitions best practices guide*. John Wiley & Sons.
Graebner, M. E., Heimeriks, K., Huy, Q., & Vaara, E. (2017). The process of postmerger integration: A review and agenda for future research. *Academy of Management Annals*, *11*(1), 1-32.
Guillén, M. F. (2002). Structural inertia, imitation, and foreign expansion: South Korean firms and business groups in China, 1987–1995. *Academy of Management Journal*, *45*(3), 509-525.
Gulati, R., Wohlgezogen, F., & Zhelyazkov, P. (2012). The two facets of collaboration: Cooperation and coordination in strategic alliances. *Academy of Management Annals*, *6*(1), 531-583.
Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, *35*(3), 469-502.
Hannan, M. T. (1998). Rethinking age dependence in organizational mortality: Logical formalizations. *American Journal of Sociology*, *104*(1), 126-164.
Hannan, M., & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review*, *49*(2), 149-164.
Hannan, M., Carroll, G., Dobrev, S., & Han, J. (1998). Organizational mortality in European and American automobile industries Part I: Revisiting the effects of age and size. *European Sociological Review*, *14*(3), 279-302.
Harrigan, K. R., & Wing, B. M. (2021). Corporate renewal and turnaround of troubled businesses: The private equity advantage. *Strategic Management Review*, *2*(2), 363-90.

*Haveman, H. A. (1995). The demographic metabolism of organizations: Industry dynamics, turnover, and tenure distributions. *Administrative Science Quarterly*, *40*(4), 586-619.
Hiebl, M. R. (2023). Sample selection in systematic literature reviews of management research. *Organizational Research Methods*, *26*(2), 229-261.
*Hite, J. M., & Hesterly, W. S. (2001). The evolution of firm networks: From emergence to early growth of the firm. *Strategic Management Journal*, *22*(3), 275-286.
*Hovakimian, A., & Hutton, I. (2010). Merger-Motivated IPOs. *Financial Management*, *39*(4), 1547-1573.
Huber, G. P. (1991). Organizational learning: The contributing processes and the literatures. *Organization Science*, *2*(1), 88-115.
Inkpen, A.(1996). Creating knowledge through collaboration. *California Management Review, 39*, 123-140.
*Iurkov, V., & Benito, G. (2020). Change in domestic network centrality, uncertainty, & the foreign divestment decisions of firms. *Journal of International Business Studies*, *51*(5), 788-812.
Jemison, D.B., & Sitkin, S.B. (1986). Corporate acquisitions: A process perspective. *Academy of Management Review*, *11*(1), 145-163.
Kale, P., Dyer, J. H., & Singh, H. (2002). Alliance capability, stock market response, and long-term alliance success: the role of the alliance function. *Strategic Management Journal*, *23*(8), 747-767.
Kale, P., & Singh, H. (2009). Managing strategic alliances: What do we know now, and where do we go from here?. *Academy of Management Perspectives*, *23*(3), 45-62.
*Karim, S., & Mitchell, W. (2004). Innovating through acquisition and internal development: A quarter-century of boundary evolution at Johnson & Johnson. *Long Range Planning, 37*(6), 525-547.
Kaul, A. (2012). Technology and corporate scope: Firm and rival innovation as antecedents of corporate transactions. *Strategic Management Journal*, *33*(4), 347-367.
*Kim, H., Hoskisson, R. E., & Zyung, J. D. (2019). Socioemotional favoritism: Evidence from foreign divestitures in family multinationals. *Organization Studies*, *40*(6), 917-940.
*Kim, T. Y., & Kuilman, J. G. (2013). The demography of resources. *Journal of Management Studies*, *50*(7), 1155-1184.
*Kim, Y. C., Lu, J. W., & Rhee, M. (2012). Learning from age difference: Interorganizational learning and survival in Japanese foreign subsidiaries. *Journal of International Business Studies*, *43*, 719-745.
*Klepper, S., & Sleeper, S. (2005). Entry by spinoffs. *Management Science*, *51*(8), 1291-1306.
Kochura, O., Mirc, N., & Lacoste, D. (2022). From a dyadic to a triadic perspective: Divestiture research implications for understanding pre-and post-acquisition processes. *European Management Journal, 40*(6), 943-951.
*Konara, P., & Ganotakis, P. (2020). Firm-specific resources and foreign divestments via selloffs: Value is in the eye of the beholder. *Journal of Business Research*, *110*, 423-434.
Kotha, R., Zheng, Y., & George, G. (2011). Entry into new niches: The effects of firm age and the expansion of technological capabilities on innovative output and impact. *Strategic Management Journal*, *32*(9), 1011-1024.
*Krammer, S. M. (2016). The role of diversification profiles and dyadic characteristics in the formation of technological alliances: Differences between exploitation and exploration in a low-tech industry. *Research Policy*, *45*(2), 517-532.
*Kumar, V., Singh, D., Purkayastha, A., Popli, M., & Gaur, A. (2020). Springboard internationalization by emerging market firms. *Journal of International Business Studies*, *51*, 172-193.
Laamanen, T., & Keil, T. (2008). Performance of serial acquirers: Toward an acquisition program perspective. *Strategic Management Journal*, *29*(6), 663-672.
Larsen, M., Manning, S., & Pedersen, T. (2013). Uncovering the hidden costs of offshoring: The interplay of complexity, organizational design, and experience. *Strategic Management Journal*, *34*(5), 533-552.
*Lavie, D., & Singh, H. (2012). The evolution of alliance portfolios: The case of Unisys. *Industrial and Corporate Change*, *21*(3), 763-809.
Le Mens, G., Hannan, M. T., & Pólos, L. (2011). Founding conditions, learning, and organizational life chances: Age dependence revisited. *Administrative Science Quarterly*, *56*(1), 95-126.

*Lee, G. K., & Lieberman, M. B. (2010). Acquisition vs. internal development as modes of market entry. *Strategic Management Journal*, *31*(2), 140-158.
Lee, D., & Madhavan, R. (2010). Divestiture and firm performance: A meta-analysis. *Journal of Management*, *36*(6), 1345-1371.
Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, *13*(S1), 111-125.
*Li, J. J., Poppo, L., & Zhou, K. Z. (2010). Relational mechanisms, formal contracts, and local knowledge acquisition by international subsidiaries. *Strategic Management Journal*, *31*(4), 349-370.
*Lin, Z., Yang, H., & Arya, B. (2009). Alliance partners and firm performance: Resource complementarity and status association. *Strategic Management Journal*, *30*(9), 921-940.
*Liou, R. S., & Rao-Nicholson, R. (2019). Age matters: The contingency of economic distance and economic freedom in emerging market firm's cross-border M&A performance. *Management International Review, 59*(3), 355-386.
*Loderer, C., & Waelchli, U. (2015). Corporate aging & takeover risk. *Review of Finance*, *19*(6), 2277-315.
*Lu, J. W., & Xu, D. (2006). Growth and survival of international joint ventures: An external-internal legitimacy perspective. *Journal of Management*, *32*(3), 426-448.
*Luo, X., & Deng, L. (2009). Do birds of a feather flock higher? The effects of partner similarity on innovation in strategic alliances in knowledge-intensive industries. *Journal of Management Studies*, *46*(6), 1005-1030.
Martin, R. (2016). M&A: The one thing you need to get right. *Harvard Business Review*, 94(6), 42-48.
*Martínez-Campillo, A., Fernández-Santos, Y., & del Pilar Sierra-Fernández, M. (2018). How well have social economy financial institutions performed during the crisis period? Exploring financial and social efficiency in Spanish credit unions. *Journal of Business Ethics*, *151*(2), 319-336.
*Mata, J., & Freitas, E. (2012). Foreignness and exit over the life cycle of firms. *Journal of International Business Studies*, *43*(7), 615-630.
*Mata, J., & Portugal, P. (2002). The survival of new domestic and foreign-owned firms. *Strategic Management Journal, 23*(4), 323–343.
McGrath, P. J. (2025). Human resource management practices in corporate restructuring: A review and agenda for future research. *Personnel Review*, *54*(5), 1316-1337.
McGrath, P. J., & Nerkar, A. (2024). Capabilities in conflict? The fallacy of sameness between divestitures and acquisitions and its ramifications for firm capability development and deployment. In *Advances in Mergers and Acquisitions* (pp. 101-122). Emerald Publishing Limited.
Mellewigt, T., Thomas, A., Weller, I., & Zajac, E. J. (2017). Alliance or acquisition? A mechanisms-based, policy-capturing analysis. *Strategic Management Journal*, *38*(12) 2353-2369.
*Mingo, S. (2013). The impact of acquisitions on the performance of existing organizational units in the acquiring firm: The case of an agribusiness company. *Management Science*, *59*(12), 2687-2701.
*Mitchell, W. (1994). The dynamics of evolving markets: The effects of business sales and age on dissolutions and divestitures. *Administrative Science Quarterly*, *39*(4), 575-602.
*Mitsuhashi, H., & Greve, H. (2009). A matching theory of alliance formation and organizational success: Complementarity & compatibility. *Academy of Management Journal*, *52*(5), 975-995.
*Mohr, A., Konara, P., & Ganotakis, P. (2020). Explaining the performance of divested overseas subsidiaries. *International Business Review*, *29*(1), 101602.
*Morgan, T., & Anokhin, S. (2023). Entrepreneurial orientation and new product performance in SMEs: The mediating role of customer participation. *Journal of Business Research*, *164*, 113921.
Moschieri, C. (2011). The implementation and structuring of divestitures: The unit's perspective. *Strategic Management Journal*, *32*(4), 368-401.
*Mueller, D. (1969). A theory of conglomerate mergers. *Quarterly Journal of Economics*, *83*(4), 643-659.
*Newburry, W., & Zeira, Y. (1997). Generic differences between equity international joint ventures (EIJVs), international acquisitions (IAs) and international greenfield investments (IGIs): Implications for parent companies. *Journal of World Business*, *32*(2), 87-102.

*Oliver, A. L. (2001). Strategic alliances and the learning life-cycle of biotechnology firms. *Organization Studies*, *22*(3), 467-489.
*Owen, S., & Yawson, A. (2010). Corporate life cycle and M&A activity. *Journal of Banking & Finance*, *34*(2), 427-440.
*Park, N. K., Mezias, J. M., & Song, J. (2004). A resource-based view of strategic alliances and firm value in the electronic marketplace. *Journal of Management*, *30*(1), 7-27.
*Pashley, M. M., & Philippatos, G. C. (1990). Voluntary divestitures and corporate life-cycle: Some empirical evidence. *Applied Economics, 22*(9), 1181-1196.
*Pashley, M. M., & Philippatos, G. C. (1993). Have voluntary divestitures of US corporations increased shareholder wealth? Empirical evidence from the life cycle. *Applied Financial Economics, 3*(1), 39-49.
*Pitsakis, K., & Giachetti, C. (2020). Information-based imitation of university commercialization strategies: The role of technology transfer office autonomy, age, and membership into an association. *Strategic Organization*, *18*(4), 573-616.
*Protogerou, A., Caloghirou, Y., & Vonortas, N. S. (2017). Determinants of young firms' innovative performance: Empirical evidence from Europe. *Research Policy*, *46*(7), 1312-1326.
Puranam, P., Singh, H., & Chaudhuri, S. (2009). Integrating acquired capabilities: When structural integration is (un) necessary. *Organization Science, 20*(2), 313-328.
PwC, (2022)., M&A reached record heights in 2021 and deal momentum is set to continue in 2022: PwC analysis, https://www.pwc.com/gx/en/news-room/press-releases/2022/global-m-and-a-industry-trends-2022-outlook.html
*Rabbiosi, L., & Santangelo, G. (2013). Parent company benefits from reverse knowledge transfer: The role of the liability of newness in MNEs. *Journal of World Business*, *48*(1), 160-170.
Ranger-Moore, J. (1997). Bigger may be better, but is older wiser? Organizational age and size in the New York life insurance industry. *American Sociological Review*, *62*(6), 903-920.
*Ransbotham, S., & Mitra, S. (2010). Target age and the acquisition of innovation in high-technology industries. *Management Science*, *56*(11), 2076-2093.
Reuer, J. J., & Ariño, A. (2002). Contractual renegotiations in strategic alliances. *Journal of Management*, *28*(1), 47-68.
Reuer, J. J., & Ragozzino, R. (2012). The choice between joint ventures and acquisitions: Insights from signaling theory. *Organization Science*, *23*(4), 1175-1190.
*Rothaermel, F., & Boeker, W. (2008). Old technology meets new technology: Complementarities, similarities, and alliance formation. *Strategic Management Journal*, *29*(1), 47-77.
*Rothaermel, F., & Deeds, D. (2006). Alliance type, alliance experience and alliance management capability in high-technology ventures. *Journal of Business Venturing*, *21*(4), 429-460.
Ruef, M., & Scott, W. R. (1998). A multidimensional model of organizational legitimacy: Hospital survival in changing institutional environments. *Administrative Science Quarterly*, 877-904.
*Ruhnka, J. C., Feldman, H. D., & Dean, T. J. (1992). The "living dead" phenomenon in venture capital investments. *Journal of Business Venturing, 7*(2), 137-155.
*Sakakibara, M. (2002). Formation of R&D consortia: Industry and company effects. *Strategic Management Journal*, *23*(11), 1033-1050.
Schijven, M., Heimeriks, K., Graebner, M., Haspeslagh, P., & Mitchell, W. (2024). Thirty-three years after "Managing Acquisitions": Reflections, insights, and research directions. Forthcoming in *Strategic Management Review*, 1-42.
*Schilke, O., & Lumineau, F. (2018). The double-edged effect of contracts on alliance performance. *Journal of Management*, *44*(7), 2827-2858.
*Shen, J. C., & Reuer, J. J. (2005). Adverse selection in acquisitions of small manufacturing firms: A comparison of private and public targets. *Small Business Economics, 24*(4), 393-407.
*Shi, W., & Prescott, J. E. (2011). Sequence patterns of firms' acquisition and alliance behaviour and their performance implications. *Journal of Management Studies*, *48*(5), 1044-1070.
*Shimizu, K., & Hitt, M. A. (2005). What constrains or facilitates divestitures of formerly acquired firms? The effects of organizational inertia. *Journal of Management*, *31*(1), 50-72.

*Sivadasan, J., Balasubramanian, N., Dharwadkar, R., & Ren, C. (2024). How do US firms grow? New evidence from a growth decomposition. *Strategic Management Journal*, https://doi.org/10.1002/smj.3641

Sorensen, J. B., & Stuart, T. E. (2000). Aging, obsolescence, and organizational innovation. *Administrative Science Quarterly*, *45*(1), 81-112.

Stinchcombe, A. (1965). Social structure and organizations. In *Handbook of Organizations* (p. 142-193). Chicago, IL: Rand McNally.

*Stuart, T. E. (2000). Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry. *Strategic Management Journal*, *21*(8), 791-811.

Thornhill, S., & Amit, R. (2003). Learning about failure: Bankruptcy, firm age, and the resource-based view. *Organization Science*, *14*(5), 497-509.

Tschang, F. T., & Ertug, G. (2016). New blood as an elixir of youth: Effects of human capital tenure on the explorative capability of aging firms. *Organization Science*, *27*(4), 873-892.

*Vandaie, R., & Zaheer, A. (2014). Surviving bear hugs: Firm capability, large partner alliances, and growth. *Strategic Management Journal*, *35*(4), 566-577.

Vidal, E. (2021). Divestitures, value creation and corporate scope. *Strategic Management Review, 2*(2), 413-35.

Vidal, E., & Mitchell, W. (2018). Virtuous or vicious cycles? The role of divestitures as a complementary Penrose effect within resource-based theory. *Strategic Management Journal*, *39*(1), 131-154.

Villalonga, B., & McGahan, A. (2005). The choice among acquisitions, alliances, and divestitures. *Strategic Management Journal, 26*(13), 1183-1208.

von Krogh, G., & Roos, J. (1994). Corporate divestiture and the phantom limb effect. *European Management Journal*, *12*(2), 171-178.

*Wilkinson, T. J., Peng, G. Z., Brouthers, L. E., & Beamish, P. W. (2008). The diminishing effect of cultural distance on subsidiary control. *Journal of International Management, 14*(2), 93–107.

*Xie, Q. (2017). Firm age, marketization, and entry mode choices of emerging economy firms: Evidence from listed firms in China. *Journal of World Business*, *52*(3), 372-385.

Xie, X., & O'Neill, H. (2014). Learning and product entry: How diversification patterns differ over firm age and knowledge domains. *Strategic Management Journal*, *35*(3), 440-449.

*Yamakawa, Y., Yang, H., & Lin, Z. (2011). Exploration vs. exploitation in alliance portfolio: Performance implications of organizational, strategic & environmental fit. *Research Policy*, *40*(2), 287-296.

Yang, H., Lin, Z., & Peng, M. W. (2011). Behind acquisitions of alliance partners: Exploratory learning and network embeddedness. *Academy of Management Journal*, *54*(5), 1069-1080.

*Zahra, S., Ireland, R., & Hitt, M. (2000). International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, *43*(5), 925-950.

*Zhang, J., Zhang, W., & Schwab, A. (2024). Interorganizational triads for foreign-market entry: Partnerships among Western, bridge-economy, and local VCs in Mainland China. *Journal of Business Venturing*, *39*(1), 106363.

*Zheng, Y., Liu, J., & George, G. (2010). The dynamic impact of innovative capability and inter-firm network on firm valuation: A longitudinal study of biotechnology start-ups. *Journal of Business Venturing*, *25*(6), 593-609.

*Zajac, E. J., Golden, B., & Shortell, S. (1991). New organizational forms for enhancing innovation: The case of internal corporate joint ventures. *Management Science*, *37*(2), 170-184.

Zollo, M., & Reuer, J. J. (2010). Experience spillovers across corporate development activities. *Organization Science, 21*(6), 1195-1212.

Zollo, M., & Singh, H. (2004). Deliberate learning in corporate acquisitions: Post-acquisition strategies and integration capability in US bank mergers. *Strategic Management Journal*, *25*(13), 1233-1256.

Figures

Figure 1: Number of papers investigating firm age and boundary-changing activities addressing each activity type

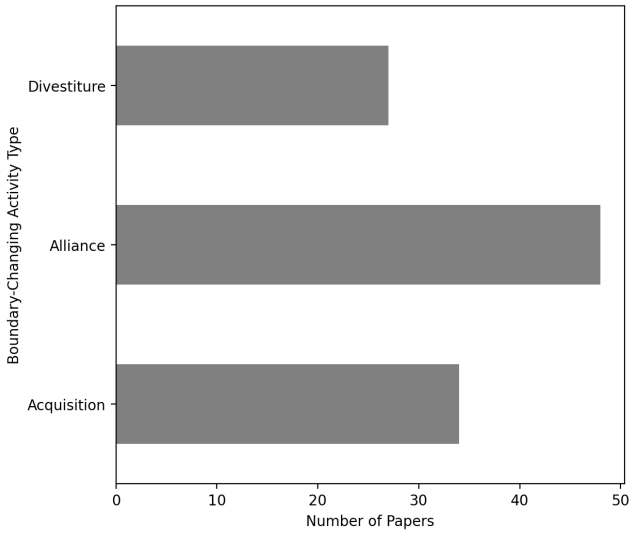

Figure 2: Number of papers investigating firm age and boundary-changing activities addressing one, two, or three activity type categories

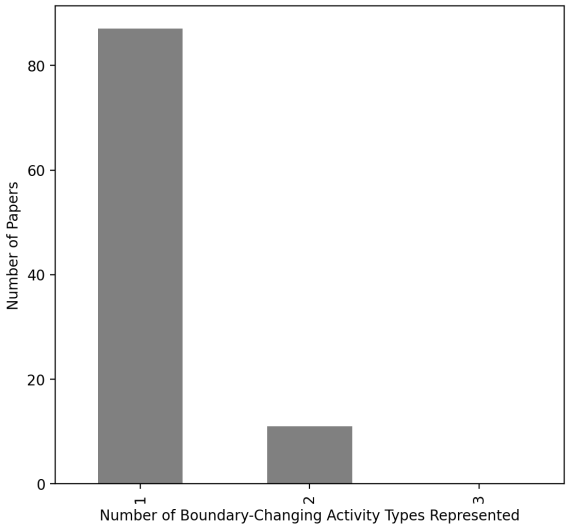

Figure 3: Number of papers investigating firm age and boundary-changing activities by publication year and activity type

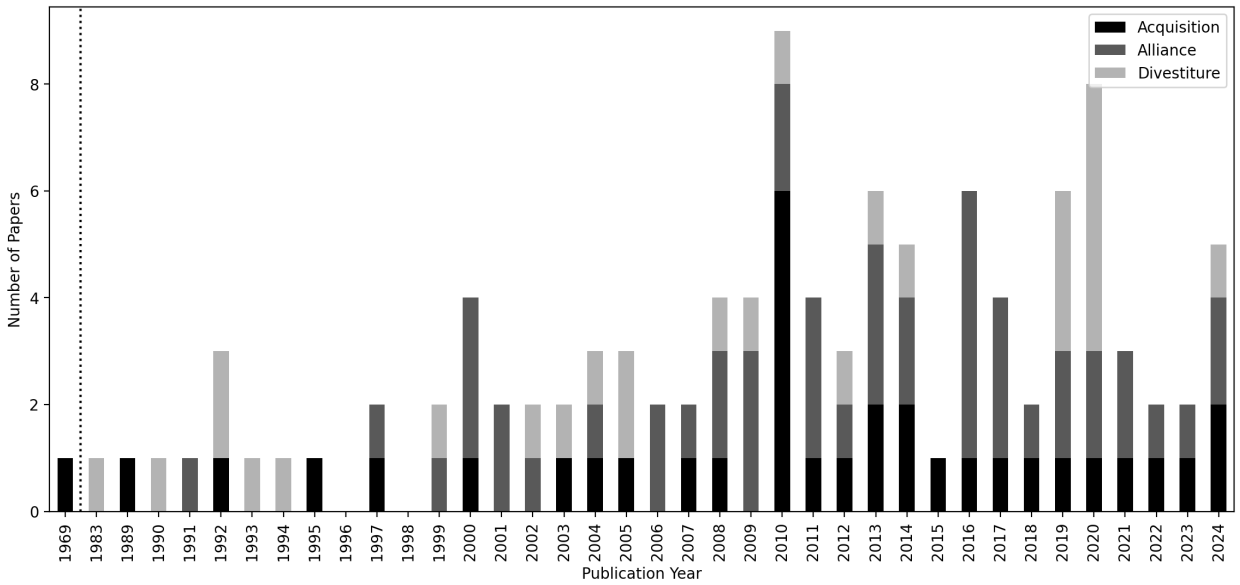

Figure 4: Number of papers investigating firm age and boundary-changing activities by firm age type and activity type

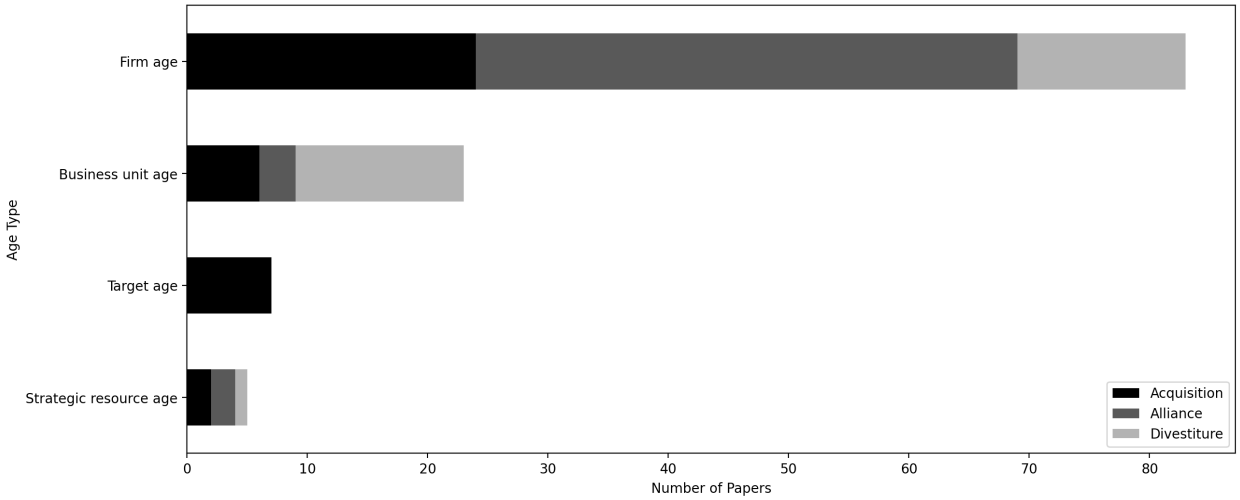

Figure 5: Number of papers investigating firm age and boundary-changing activities by activity stage and activity type

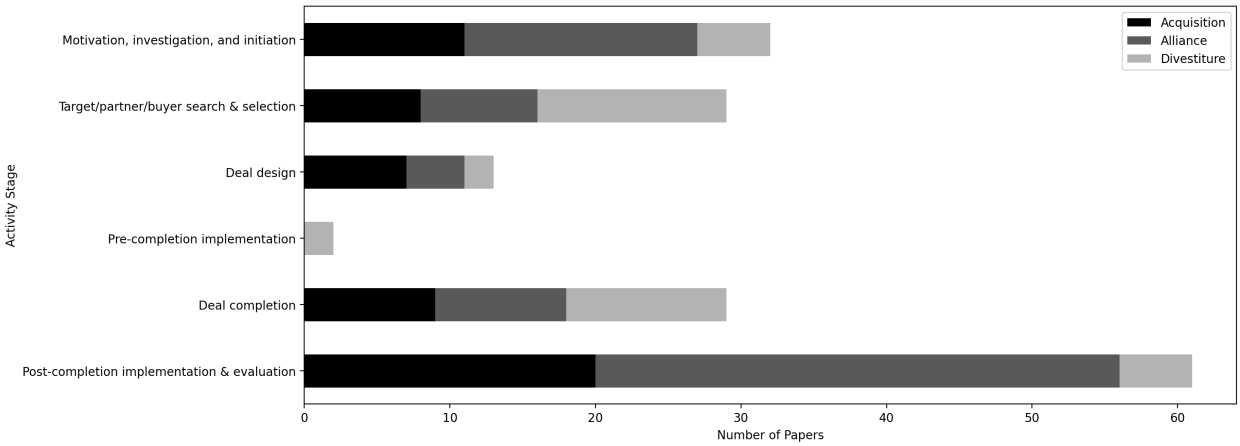

Figure 6: Number of papers investigating firm age and boundary-changing activities by theoretical mechanism for age influence and activity type

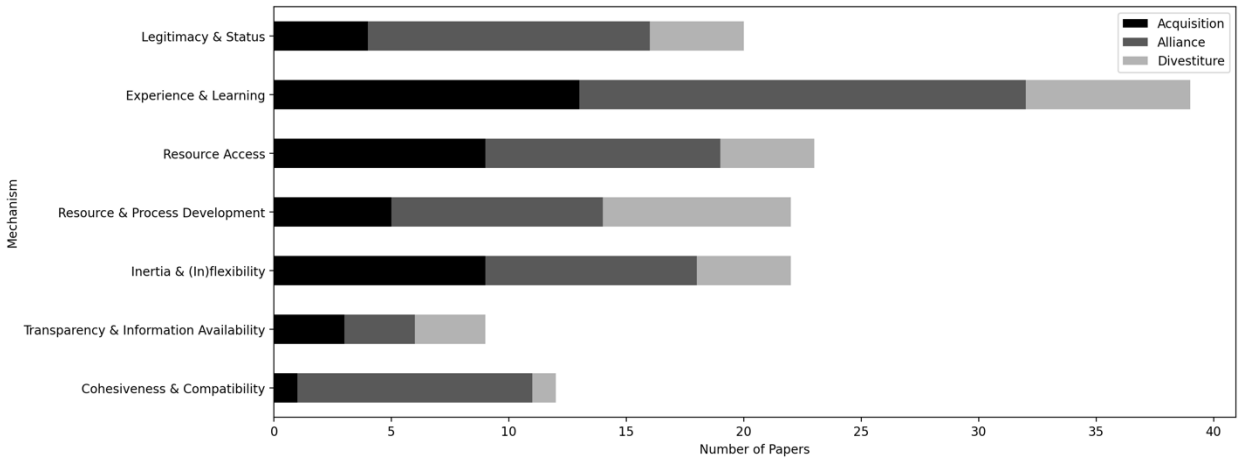

Figure 7: Heat map of boundary-changing activity stage by theoretical mechanism. Paper count indicated in each cell.