McKinsey & Company

McKinsey on Investing

Perspectives and research for the investing industry

Number 10, November 2024

McKinsey on Investing is written by McKinsey experts and practitioners in the Private Capital, Wealth & Asset Management, Capital Projects & Infrastructure, and Real Estate Practices.

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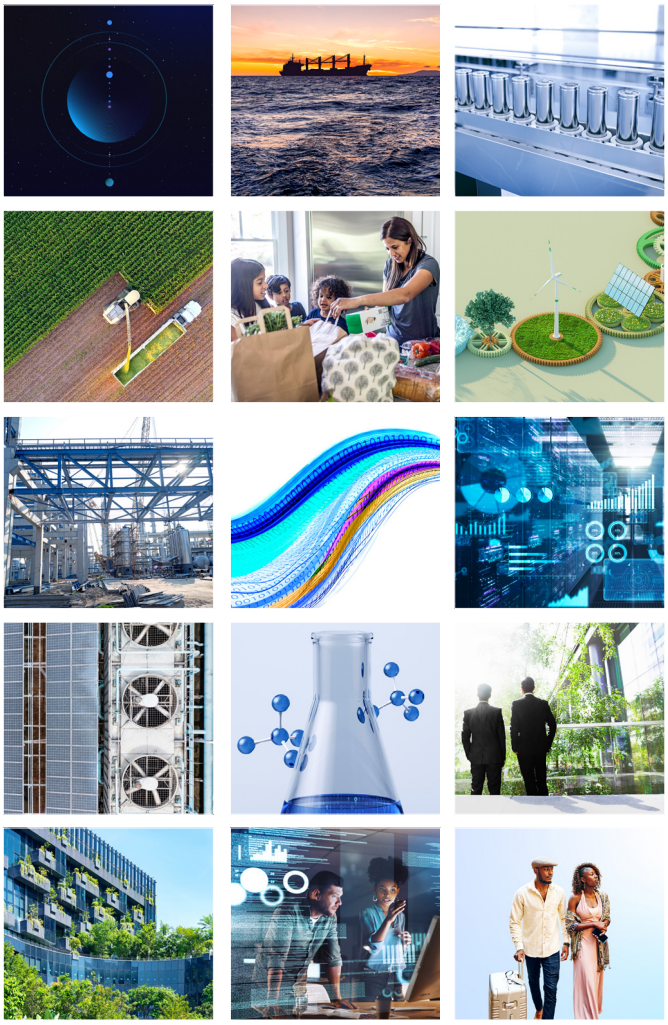

Introduction

Welcome to the tenth anniversary issue of *McKinsey on Investing*, our flagship compendium of insights relevant to investors of all stripes—from asset owners to investment managers, across both private and public markets.

In launching *McKinsey on Investing* in 2014, we hoped to showcase the most compelling research relevant to investors contributed by our colleagues across the globe and interview leading voices within the investor community. Ten years on, we are grateful to you, our readers, for helping us fulfill our aspirations.

Investors have confronted a raft of challenges in 2024. Geopolitical tensions, a sharp correction in equity markets, the thrall of monetary policy, and elections in more than 80 countries have gripped attention. But anecdotal observations from investment committee members reporting heavier briefcases may indicate that a prolonged period of "wait and see" is making way for an era of action.

We begin the issue with some notable facts and figures that highlight how investors are finding (and creating) value across industries and regions. Next, we uncover insights on how investors are building new capabilities to gain an edge, including in private equity and real estate. In the following section, we focus on innovation and generative AI, highlighting the challenges and opportunities for investors in embracing technological change. We then look at some of the promising opportunities emerging in areas including impact investing, agriculture technology, and software, and in Japan. Finally, we close this anniversary issue with 15 pages of McKinsey's most pertinent sector research, featuring insights from 15 industry clusters.

We hope you enjoy this collection and find ideas worthy of your consideration. You can find these and other perspectives that are relevant to investing at McKinsey.com/Investing and in our McKinsey Insights app, available for Android and iOS.

The Editorial Board

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Notable facts and figures

Amid uncertainty, leaders are uncovering new sources of value creation across regions and industries.

$132 trillion

Global assets under management

(see page 21)

$900 billion

Amount spent by global private capital companies to acquire life insurance and annuities liabilities, as of September 2024

(see page 32)

$30 trillion

Addressable market for private credit in the United States

(see page 72)

Nine

Number of private equity exits valued at $1 billion or more in Japan since 2010

(see page 124)

$2 trillion

Total estimated tokenized market capitalization by 2030

(see page 138)

60%

Decline in venture capital funding from late 2021 to 2023

(see page 105)

$4 trillion

Annual investment required in climate, healthcare, and education solutions to meet UN Sustainable Development Goals by 2030

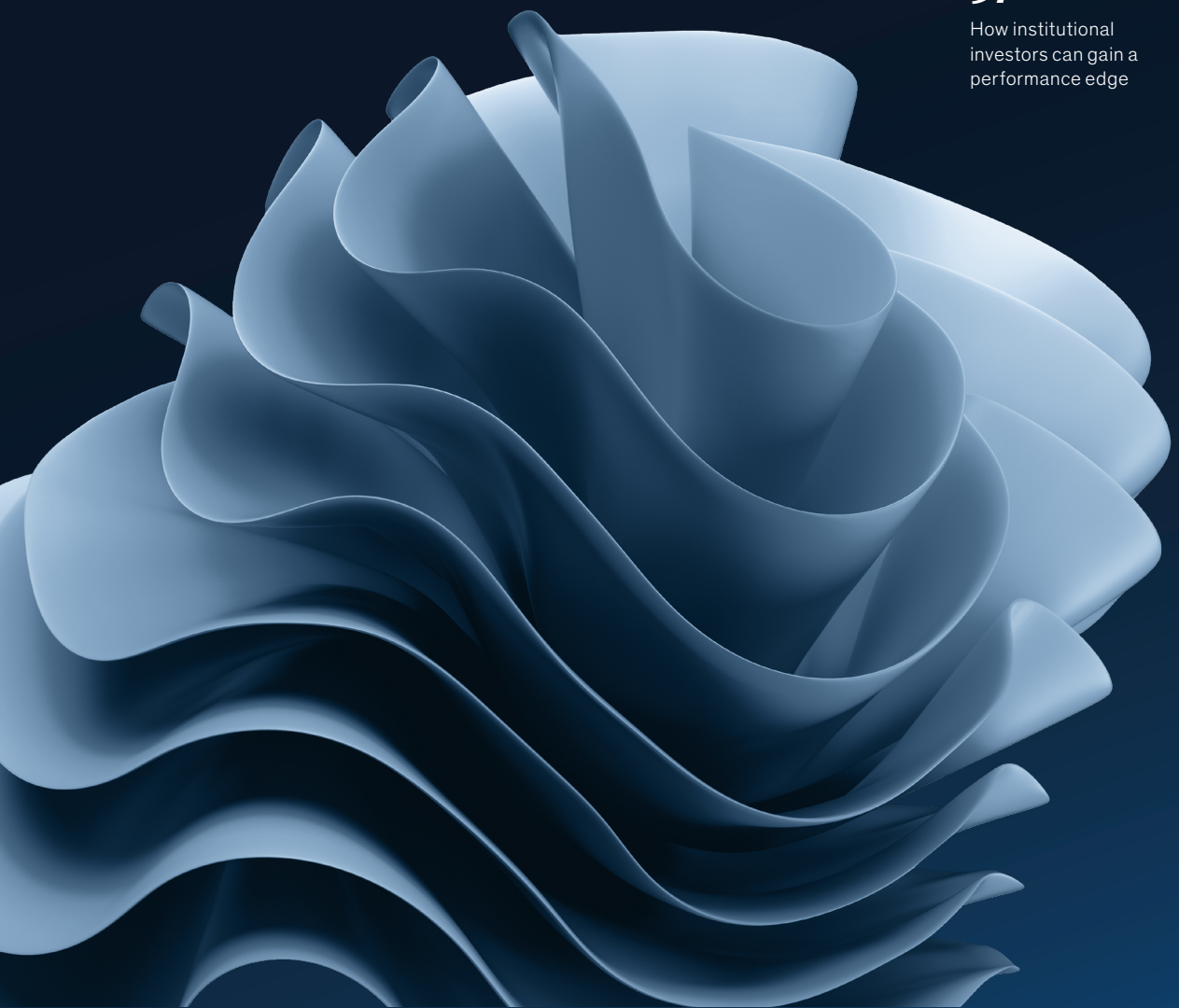
(see page 87)

$1.8 trillion

Estimated size of the global space economy by 2035, up from $630 billion in 2023

(see page 131)

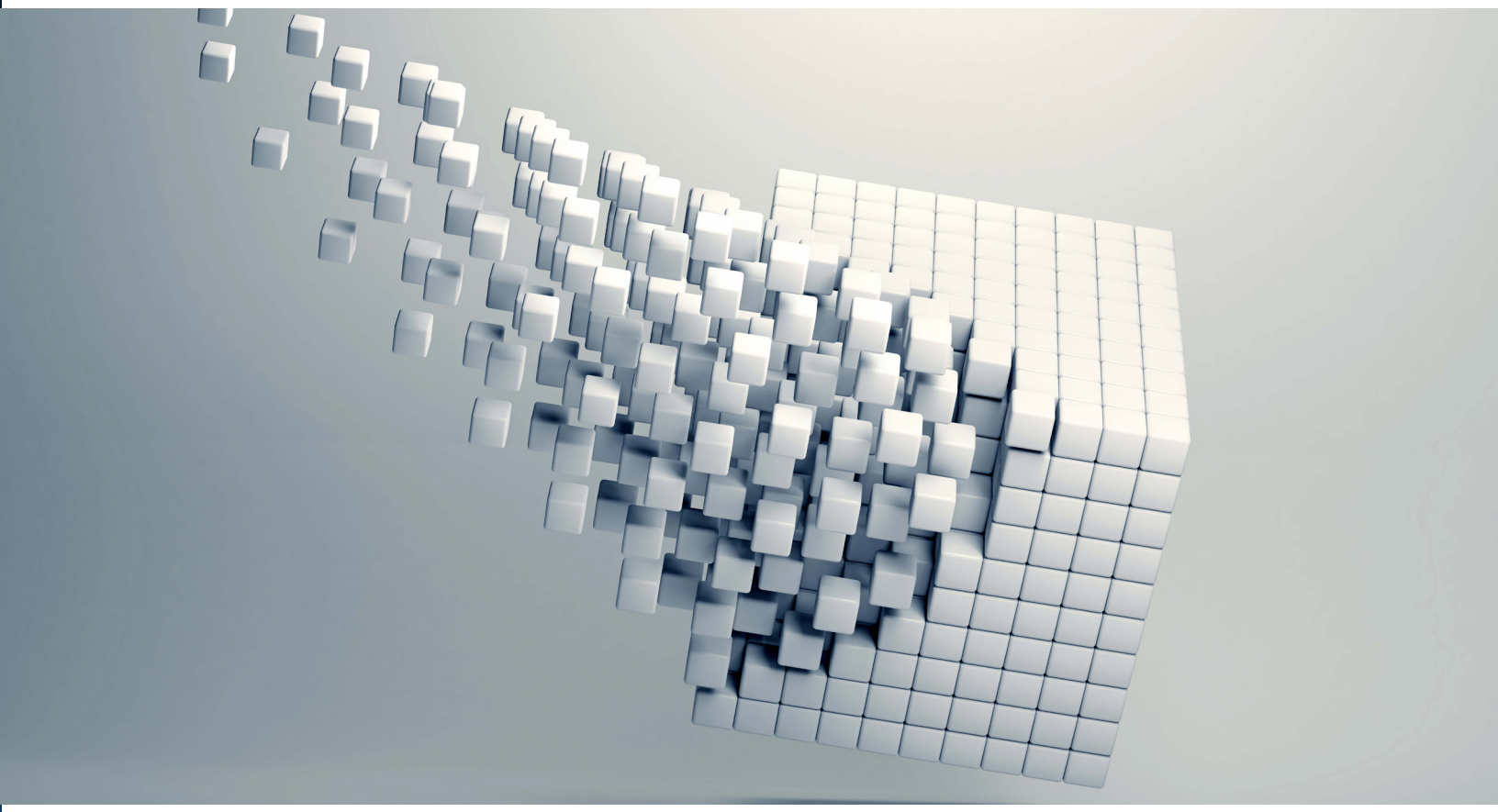
Managing the investment firm



Five alphas: Essential capabilities to succeed in the next era of private capital

The next era of private capital will look different from the last. Five core capabilities can determine which managers capture strong returns, growth, and profitability in these changing times.

by Aly Jeddy, John Kelleher, and Ju-Hon Kwek
with Louis Dufau



Private markets assets under management (AUM) have experienced explosive growth over the past decade, increasing, our analysis shows, from $3.8 trillion[1] in 2014 to $13.1 trillion[2] during a period of historically low interest rates and expanding deal volumes, and an increasingly globalized economy.

Macroeconomic conditions over the next decade will be quite different.[3] Private markets have entered a slower era of growth, with near-term fundraising challenges. Yet it is our view that private markets' AUM could triple (again) to over $30 trillion by 2034, supported by new investment needs, new sources of capital, and private capital's "governance advantage,"[4] which continues to create superior returns for the industry relative to public market comparables.

Firms that don't, at a minimum, triple in size over the next ten years could structurally lose market share, find it increasingly difficult to remain relevant for large capital allocators, and face challenges in attracting and retaining some of the best talent entering the industry.

Based on our extensive experience across the private markets ecosystem, serving general partners (GPs), institutional investors, private-wealth intermediaries, and traditional asset managers, we believe firms in the next decade will need to leverage what we call the "five alphas" to outperform. Excelling against two or three alphas while meeting a (high) minimum acceptable standard on the rest can create a path to outsize growth and returns.

Sales alpha

Sales alpha is the extent to which firms are able to raise more capital on better terms than their "fair share" (for example, for a given track record of performance and set of market conditions).

The power of sales alpha is clear in the current fundraising drought. From 2021 to 2023, total capital raised by private markets firms declined by 17 percent per annum to a little over $1 trillion, but the number of funds launched declined by 39 percent per annum.[5] Last year, the top 25 private markets managers accounted for 41 percent of overall fundraising, compared with average levels of 29 percent over the prior decade,[6] with even wider gaps among leaders and laggards in specific asset classes such as infrastructure.

Firms that are able to buck capital droughts build capital-raising machines that do the following:

— expand their geographical reach (for example, beyond US public pension funds to sovereign-wealth funds in the Middle East and Southeast Asia)

— use insurance balance sheets as a source of both permanent capital and material management fees, particularly for credit and real estate strategies

— tap into the vast ultra-high-net-worth families and retail-investors market[7] (which some private asset managers expect to account for more than 30 percent of their fundraising going forward[8])

[1] Based on Preqin data.
[2] As of June 30, 2023. See "McKinsey Global Private Markets Review 2024: Private markets in a slower era," March 28, 2024.
[3] Reasons include higher interest rates (estimated to settle 150 to 250 basis points above levels experienced over the 2010–20 super cycle, per a McKinsey survey of 200 institutional investors conducted in January 2024); higher growth in select developed countries (for example, the United States); reengineering of supply chains, which triggered structural realignment of manufacturing capacity; rise of a new middle class in select growth markets (for example, Middle East, South East Asia); and a shift toward a lower-carbon economy.
[4] This governance advantage includes but is not limited to: a dynamic and disciplined capital allocation approach to select the right sectors at the right price, a very disciplined approach to operational execution and performance management (which can be applied over longer horizons), and flexibility in exit timing and liquidity pathways (which can lead to material multiple expansion).
[5] Based on Preqin data, as of first quarter 2024.
[6] Analysis based on Preqin data for funds where size data is available as of quarter one 2024.
[7] US wealth management client assets reached $44.8 trillion in 2022 (with wealth intermediaries such as private banks, independent and regional broker–dealers, RIAs, and wire houses).
[8] "KKR & Co., Inc. (KKR) CEO Scott Nuttall on Q3 2021 results - earnings call transcript," Seeking Alpha, earnings conference call, November 2, 2021.

— innovate with new product vehicles to meet new investor needs, such as nontraded real estate investment trusts (REITs), business development corporations (BDCs), and interval funds and other semiliquid structures, which reached around $241 billion in private markets AUM in the United States alone in 2022[9]

— begin to access large corporate entities as a new source of strategic capital

Firms with strong sales alpha are not necessarily the top quartile funds in every vintage; instead, they may have developed strong brands and deliver on their performance objectives in ways that meet the needs of limited partner (LP) portfolios. For example, they may consistently deliver 900 basis points of outperformance relative to public markets at scale over extended periods, or they may provide material upside in favorable market conditions (for example, 30 percent-plus) while capping the downside to a pension's hurdle rate (for example, 8 percent).

These firms often develop product suites and a capital structure they can adapt to match capital to the opportunity set, as well as client coverage and engagement models that are both systematized and segmented. They also embrace the mindset that raising capital is as critical to a firm's success as investing capital. They invest in their distribution engines accordingly, with investment teams carving out 15 to 25 percent of their time for fundraising, and they take a strategic approach to partnerships with institutional limited partners, wealth intermediaries, and large companies.

Sourcing alpha

Sourcing alpha is the ability to manufacture new bespoke investment exposures (that is, specific return, risk, and duration profiles) rather than rely solely on intermediated deal flow. To achieve sourcing alpha, firms need a high degree of creativity to craft attractive transactions, paired with a sophisticated capital allocation process. They also need a broad product suite to meet different investor needs.

Next-generation sourcing creativity, for example, was observed in a number of recent partnerships between large infrastructure platforms and established companies across industries such as semiconductors, fiber, power generation, and life sciences. Among the examples are Brookfield's $15 billion investment in Intel's manufacturing expansion,[10] KKR's purchase of 30 percent of Telenor's fiber business,[11] BlackRock's Gigapower joint venture with AT&T,[12] and Blackstone's financing deal with Moderna.[13]

Such opportunities stem from employing ecosystem-level approaches to sourcing, spanning multiple sectors and themes, as well as innovative capital structure angles (such as common equity, preferred equity, or project-level debt financing). In this way, firms can create larger deals that are derisked and divorced from the cyclicality of a given sector.

Firms will need to shift their approaches to sourcing away from a sector-specific view and toward the functional ways that opportunities present themselves in the market (for example, digitization and decarbonization). Firms can introduce more fluid collaboration across investment teams. They should employ talent with diverse skill sets—including individuals with corporate-development experience and a partnership/M&A mindset and experience—who can work with traditional deal partners.

Sourcing alpha can be generated through partnerships—between venture firms and university labs, for instance, or between credit managers and originators of liabilities. For good

[9] *US alternative investments 2023: The expanding reach of private capital*, Cerulli Associates, 2023.
[10] "Brookfield Infrastructure signs definitive agreement with Intel," Brookfield press release, August 23, 2022.
[11] "Telenor establishes fibre company in Norway," Telenor press release, October 7, 2022.
[12] "Gigapower joint venture from AT&T and BlackRock launches," AT&T press release, May 11, 2023.
[13] "Blackstone Life Sciences announces collaboration to support Moderna's Influenza program," Blackstone press release, March 27, 2024.

examples, consider Apollo Global Management's 28 partnerships leading to $200 billion in asset-backed origination as of November 2023,[14] or Centerbridge's partnership with Wells Fargo[15] to secure direct-lending opportunities. Those capable of producing sourcing alpha can pair this opportunity-manufacturing engine with a "return tranching" capability that carves out a given transaction into distinct exposures that can be matched to each investor's parameters (return, duration, liquidity) and packaged into portfolios meeting specific investment objectives.

Operational alpha

This source of alpha—also described as postacquisition value creation—takes on new importance in an era of higher interest rates, inflation, and uncertain public market exits.

Consider this example: a private equity transaction with typical leverage must achieve a two to four times increase in cash flow CAGR over the course of its holding period if it is to absorb a 400-basis-points increase in the cost of debt, without eroding its original planned return.[16] If public market uncertainty adds another year to the holding period, about 10 percent more in incremental earnings will be required to produce that same return. The problem is compounded when adding inflation and longer investment horizons (created by the rise of permanent capital vehicles, co-investors with patient capital, long-dated funds, and continuation vehicles).

"Plain vanilla" operational improvements (such as G&A trimming and pricing enhancements) are now table stakes. Achieving outsize returns from operational alpha will require firms to develop the conviction to underwrite and the muscle to deliver truly transformational change. They can do this by, among other initiatives, creating new business models, divesting portfolios at scale, reducing the drag on working capital, building new businesses and launching new products, delivering technology improvements beyond enterprise resource planning systems and cloud transformations, and securing major capital efficiency improvements. Part of the muscle should come directly from the portfolio company CEO, who has an outsize impact on any deal's performance as the integrative executive and the "face of the business" to its owners.

For private markets firms, distinctiveness in operational alpha requires the following:

- a precise view of each asset's full potential across all strategic, commercial, and operational transformation levers
- a disciplined approach to maximizing the return on intervention—in our experience, few assets account for a disproportionate share of the potential equity value gained in a given fund
- an "exit first" mindset that factors in the future asset owner's objectives in the pacing and ambition of value creation initiatives and matches the delivery of that value to anticipated exit windows
- a talent network to source new and replacement board members and management teams
- a proven approach to upskill CEOs across operating essentials (that is, a set of capabilities that are proven to move the needle on company performance, such as rapid resource allocation) and an ecosystem of third-party partners who optimize expertise, reduce the fixed cost to the firm, and link their compensation to the achievement of specific outcomes

[14] "Platform origination deep dive," Apollo Global Management, November 2023.
[15] "Centerbridge Partners and Wells Fargo enter strategic relationship focused on direct lending to middle-market companies," Wells Fargo press release, September 26, 2023.
[16] Depending on underwriting assumptions. Range retained assumes a base case with 5 percent EBITDA CAGR, 3 to 4 times net debt to EBITDA at entry, six-year holding period, 1.5 times minimum debt coverage ratio, and constant entry and exit multiples.

Exit alpha

Firms producing exit alpha are able to monetize assets successfully in a range of ways and market conditions. As one CEO told us, "DPI[17] has become the new IRR, so mastering exits is now both the alpha and omega in private markets investing."

Exit alpha matters, especially now, when rapid changes in the macroeconomic environment are having an outsize impact on the liquidity of private markets.

In 2021, favorable market conditions propped up overall global exit volumes to record highs (approximately $2 trillion, compared with $1 trillion in 2020[18]) and helped some firms post their highest fund realizations ever. In 2023, all three traditional exit pathways—secondary buyouts, sales to strategics, and IPOs—floundered, and volumes collapsed, both in absolute terms to $840 billion,[19] as well as on a relative basis (falling to 1.4 percent of the overall AUM versus a 3.3 percent average over the prior decade[20]).

Firms that demonstrate exit alpha develop a range of exit routes, such as:

— GP-led continuation vehicles (which, at volumes of $48 billion[21] in 2023, are emerging as a distinct sub-asset class)

— long-hold institutional structures, potentially with long-term, yield-oriented payouts

— retail-oriented vehicles that have been used as exit pathways in credit but require further evolution before they can be applied to private equity and infrastructure

These firms also perform a systematic and disciplined re-underwriting of each investment every six to 12 months, based on consideration of their go-forward returns, outlook for capital market sentiment, portfolio-level risks, and the overall fund deployment and realization profile.

Most of all, GPs that achieve exit alpha are always obsessing about who the next owner of their assets could be and how to go about returning cash to the fund and its limited partners. This focus could be a major source of differentiation in the next era, given investors' increased preference for true cash returns over paper gains.

Organizational alpha

Organizational alpha involves designing the firm's structure and operating model around three elements:

— *client-centricity,* with a capital-solutions mindset that designs new strategies and products to meet the needs of LP portfolios and delivers nontraditional structures (for example, separate accounts, co-investments) that support LP investment objectives

— *repeatability,* with just enough process to compensate for the loss of proximity in a growing firm, maintain a consistently high bar for investment performance, and eliminate damaging outcomes

— *scalability,* with a modular architecture to acquire and integrate new assets and new talent, investments in data and technology to strengthen the firm's spine, and strong governance and succession planning at all levels (not just at the top) to preserve entrepreneurialism in a bigger firm

Successful firms have engineered and industrialized their flagship processes end to end (investment and portfolio committees, client engagement, partner

[17] Distributed-to-paid capital is a term used to measure the total capital returned by a private equity fund to its investors up to a certain time.
[18] Based on Pitchbook data, as of March 2024.
[19] Based on Pitchbook data, as of March 2024.
[20] Based on Preqin data, as of March 2024.
[21] *PJT Park Hill Q1 2024 Secondary Market Insight*, PJT Partners, April 2024.

elections, compensation) to create consistent outcomes while preserving their cultural fabric as they scaled.

The private capital industry has grown from strength to strength over the past half century. Near-term fundraising challenges notwithstanding, we expect the industry's growth trajectory to continue over the long term.

The five alphas we describe in this article touch every important facet of a private markets firm: fundraising, investments (and how firms go about sourcing their deals), operations, exits, as well as the organizational structure and operating model. Firms that build the capabilities needed to achieve these alphas have the potential to become the next generation of outperformers in private investing.

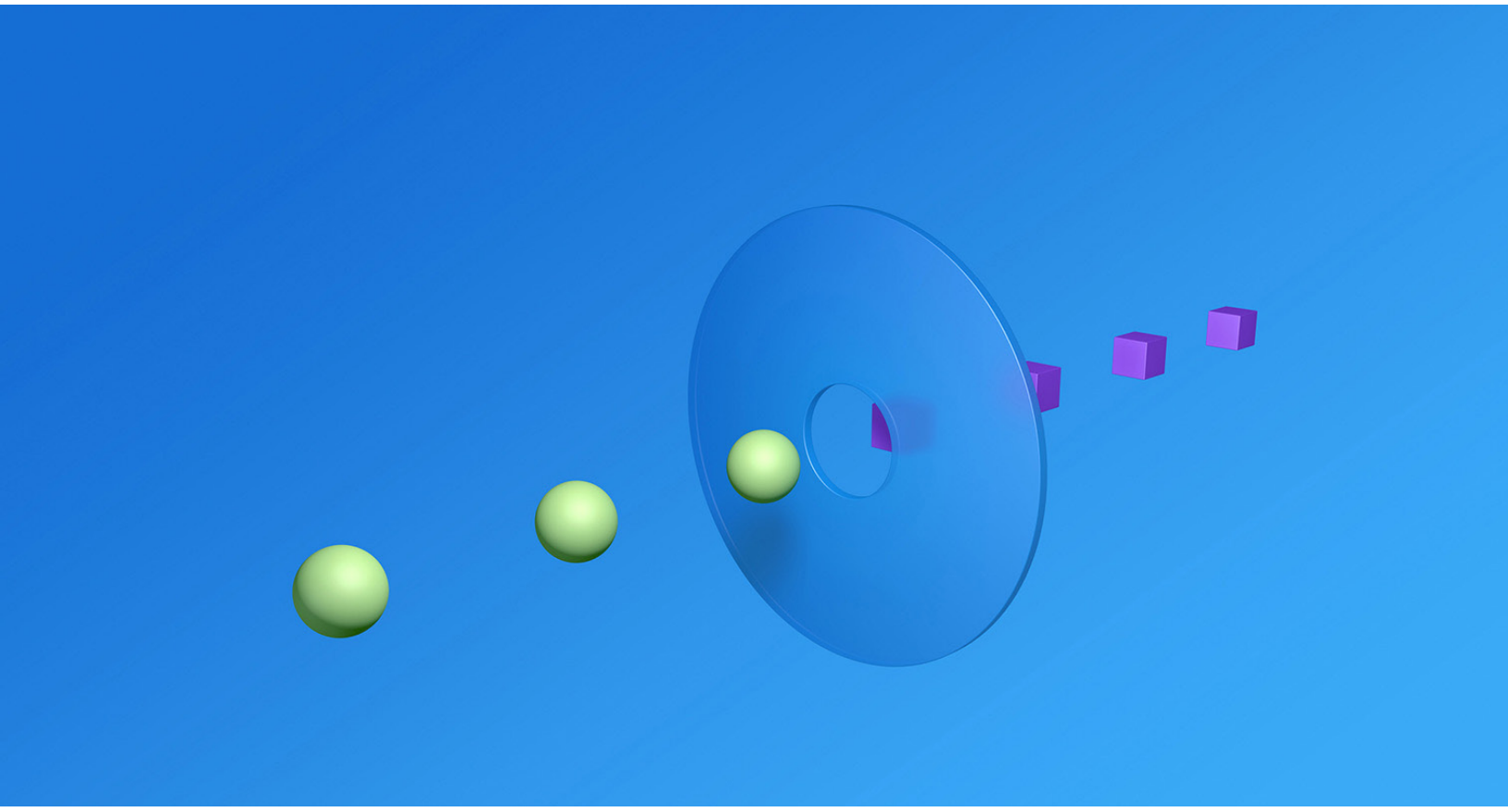
Aly Jeddy and **Ju-Hon Kwek** are senior partners in McKinsey's New York office, where **Louis Dufau** is an associate partner. **John Kelleher** is a senior partner in the Toronto office.

The authors wish to thank David Quigley, Fredrik Dahlqvist, Gary Pinkus, and Nikhil Koushik for their contributions to this article.

Bridging private equity's value creation gap

Amid a slower deal environment, private equity buyout managers can adapt their approach to value creation—and, as a first step, emphasize improvements to operational efficiency.

by Jason Phillips, Jose Luis Blanco, Matthew Maloney, and William Bundy



For the past 40 years or so, private equity (PE) buyout managers largely invested capital in an environment of declining interest rates and escalating asset prices. During that period, they were able to rely on financial leverage, enhanced tax and debt structures, and increasing valuations on high-quality assets to generate outsize returns for investors and create value.

Times have changed, however. Since 2020, the cost of debt has increased and liquidity in debt markets is harder to access given current interest rates, asset valuations, and typical bank borrowing standards. Fund performance has suffered as a result: PE buyout entry multiples declined from 11.9 to 11.0 times EBITDA through the first nine months of 2023.[1]

Even as debt markets begin to bounce back, a new macroeconomic reality is setting in—one that requires more than just financial acumen to drive returns. Buyout managers now need to focus on operational value creation strategies for revenue growth, as well as margin expansion to offset compression of multiples and to deliver desired returns to investors.

Based on our years of research and experience working with a range of private-capital firms across the globe, we have identified two key principles to maximize operational value creation.

First, *buyout managers should invest with operational value creation at the forefront.* This means that in addition to strategic diligence, they should conduct operational diligence for new assets. Their focus should be on developing a rigorous, bespoke, and integrated approach to assessing top-line and operational efficiency. During the underwriting process, managers can also identify actions that could expand and improve EBITDA margins and growth rates during the holding period, identify the costs involved in this transformation, and create rough timelines to track the assets' performance. And if they acquire the asset, the manager should: 1) clearly establish the value creation objectives before deal signing, 2) emphasize operational and top-line improvements after closing, and 3) pursue continual improvements in ways of working with portfolio companies. Meanwhile, for existing assets, the manager should ensure that the level of oversight and monitoring is closely aligned with the health of each asset.

Second, *everyone should understand and have a hand in improving operations.* Within the PE firm, the operating group and deal teams should work together to enable and hold portfolio companies accountable for the execution of the value creation plan. This begins with an explicit focus on "linking talent to value"—ensuring leaders with the right combination of skills and experience are in place and empowered to deliver the plan, improve internal processes, and build organizational capabilities.

In our experience, getting these two principles right can significantly improve PE fund performance. Our initial analysis of more than 100 PE funds with vintages after 2020 indicates that general partners that focus on creating value through asset operations achieve a higher internal rate of return—up to two to three percentage points higher, on average—compared with peers.

The case for operational efficiency

The ongoing macroeconomic uncertainty has made it difficult for buyout managers to achieve historical levels of returns in the PE buyout industry using old ways of value creation.[2] And it's not going to get any easier anytime soon, for two reasons.

[1] *2024 Global Private Markets Review*, McKinsey, March 2024.
[2] Overall, roughly two-thirds of the total return for buyout deals that were entered in 2010 or later, and exited 2021 or before, can be attributed to market multiple expansion and leverage. See *2024 Global Private Markets Review.*

Higher-for-longer rates will trigger financing issues

The US Federal Reserve projects that the federal funds rate will remain around 4.5 percent through 2024, then potentially drop to about 3.0 percent by the end of 2026.[3] Yet, even if rates decline by 200 basis points over the next two years, they will still be higher than they were over the past four years when PE buyout deals were underwritten.

This could create issues with recapitalization or floating interest rate resets for a portfolio company's standing debt. Consider that the average borrower takes a leveraged loan at an interest coverage ratio of about three times EBIDTA (or 3x).[4] With rising interest expenses and additional profitability headwinds, these coverage ratios could quickly fall below 2x and get close to or trip covenant triggers around 1x. In 2023, for example, the average leveraged loan in the healthcare and software industries was already at less than a 2x interest coverage ratio.[5] To avoid a covenant breach, or (if needed) increasing recapitalization capital available without equity paydown, managers will need to rely on operational efficiency to increase EBITDA.

Valuations are mismatched

If interest rates remain high, the most recent vintage of PE assets is likely to face valuation mismatches at exit, or extended hold periods until value can be realized. Moreover, valuation of PE assets has remained high relative to their public-market equivalents, partly a result of the natural lag in how these assets are marked to market. As the CEO of Harvard University's endowment explained in Harvard's 2023 annual report, it will likely take more time for private valuations to fully reflect market conditions due to the continued slowdown in exits and financing rounds.[6]

Adapting PE's value creation approach

Operational efficiency isn't a new concept in the PE world. We've previously written about the strategic shift among firms, increasingly notable since 2018, moving from the historical "buy smart and hold" approach to one of "acquire, align on strategy, and improve operating performance."

However, the role of operations in creating more value is no longer just a source of competitive advantage but a competitive necessity for managers. Let's take a closer look at the two principles that can create operational efficiency.

Invest with operational value creation at the forefront

PE fund managers can improve the profitability and exit valuations of assets by having operations-related conversations up front.

Assessing new assets. Prior to acquiring an asset, PE managers typically conduct financial and strategic diligence to refine their understanding of a given market and the asset's position in that market. They should also undertake operational diligence—if they are not already doing so—to develop a holistic view of the asset to inform their value creation agenda.

Operational diligence involves the detailed assessment of an asset's operations, including identification of opportunities to improve margins or accelerate organic growth. A well-executed operational-diligence process can reveal or confirm which types of initiatives could generate top-line and efficiency-driven value, the estimated cash flow improvements these initiatives could generate, the approximate timing of any cash flow improvements, and the potential costs of such initiatives.

[3] "Summary of economic projections," Federal Reserve Board, December 13, 2023.
[4] The interest coverage ratio is an indicator of a borrower's ability to service debt, or potential default risk.
[5] James Gelfer and Stephanie Rader, "What's the worst that could happen? Default and recovery rates in private credit," Goldman Sachs, April 20, 2023.
[6] Message from the CEO of Harvard Management Company, September 2023.

The results of an operational-diligence process can be advantageous in other ways, too. Managers can use the findings to create a compelling value creation plan, or a detailed memo summarizing the near-term improvement opportunities available in the current profit-and-loss statement, as well as potential opportunities for expansion into adjacencies or new markets. After this step is done, they should determine, in collaboration with their operating-group colleagues, whether they have the appropriate leaders in place to successfully implement the value creation plan.

These results can also help managers resolve any potential issues up front, prior to deal signing, which in turn could increase the likelihood of receiving investment committee approval for the acquisition. Managers also can share the diligence findings with co-investors and financiers to help boost their confidence in the investment and the associated value creation thesis.

It is crucial that managers have in-depth familiarity with company operations, since operational diligence is not just an analytical-sizing exercise. If they perform operational diligence well, they can ensure that the full value creation strategy and performance improvement opportunities are embedded in the annual operating plan and the longer-term three- to five-year plan of the portfolio company's management team.

Assessing existing assets. When it comes to existing assets, a fundamental question for PE managers is how to continue to improve performance throughout the deal life cycle. Particularly in the current macroeconomic and geopolitical environment, where uncertainty reigns, managers should focus more—and more often—on directly monitoring assets and intervening when required. They can complement this monitoring with routine touchpoints with the CEO, CFO, and chief transformation officer (CTO) of individual assets to get updates on critical initiatives driving the value creation plan, along with ensuring their operating group has full access to each portfolio company's financials. Few PE managers currently provide this level of transparency into their assets' performance.

To effectively monitor existing assets, managers can use key performance indicators (KPIs) directly linked to the fund's investment thesis. For instance, if the fund's investment thesis is centered on the availability of inventory, they may rigorously track forecasts of supply and demand and order volumes. This way, they can identify and address issues with inventory early on. Some managers pull information directly from the enterprise resource planning systems in their portfolio companies to get full visibility into operations. Others have set up specific "transformation management offices" to support performance improvements in key assets and improve transparency on key initiatives.

We've seen managers adopt various approaches with assets that are on track to meet return hurdles. They have frequent discussions with the portfolio company's management team, perform quarterly credit checks on key suppliers and customers to ensure stability of their extended operations, and do a detailed review of the portfolio company's operations and financial performance two to three years into the hold period. Managers can therefore confirm whether the management team is delivering on their value creation plans and also identify any new opportunities associated with the well-performing assets.

If existing assets are underperforming or distressed, managers' prompt interventions to improve operations in the near term, and improve revenue over the medium term, can determine whether they should continue to own the asset or reduce their equity position through a bankruptcy proceeding. One manager implemented a cash management program to monitor and improve the cash flow for an underperforming retail asset of a portfolio company. The approach helped the portfolio company overcome a peak cash flow crisis period, avoid tripping liquidity covenants in an asset-backed loan, and get the time needed for the asset's long-term performance to improve.

Reassess internal operations and governance

In addition to operational improvements, managers should also assess their own operations and consider shifting to an operating model that encourages increased engagement between

their team and the portfolio companies. They should cultivate a stable of trusted, experienced executives within the operating group. They should empower these executives to be equal collaborators with the deal team in determining the value available in the asset to be underwritten, developing an appropriate value creation strategy, and overseeing performance of the portfolio company's management.

Shift to a 'just right' operating model for operating partners. The operating model through which buyout managers engage with portfolio companies should be "just right"—that is, aligned with the fund's overall strategy, how the fund is structured, and who sets the strategic vision for each individual portfolio company.

There are two types of engagement operating models—consultative and directive. When choosing an operating model, firms should align their hiring and internal capabilities to support their operating norms, how they add value to their portfolio companies, and the desired relationship with the management team (exhibit).

Take the example of a traditional buyout manager that acquires good companies with good management teams. In such a case, the portfolio company's management team is likely to already have a strategic vision for the asset. These managers may therefore choose a more consultative engagement approach (for instance, providing advice and support to the portfolio company for any board-related issues or other challenges).

For value- or operations-focused funds, the manager may have higher ownership in the strategic vision for the asset, so their initial goal should be to develop a management team that can deliver on a specific investment thesis. In this case, the support required by the portfolio company could be less specialized (for example, the manager helps in hiring the right talent for key functional areas), and more integrative, to ensure a successful end-to-end transformation for the asset. As such, a more directive or oversight-focused engagement operating model may be preferred.

Successful execution of these engagement models requires the operating group to have the right talent mix and experience levels. If the manager implements a "generalist" coverage model, for example, where the focus is on monitoring and overseeing portfolio companies, the operating group will need people with the ability (and experience) to support the management in end-to-end transformations. However, a different type of skill set is required if the manager chooses a "specialist" coverage model, where the focus is on providing functional guidance and expertise (leaving transformations to the portfolio company's management teams). Larger and more mature operating groups frequently use a mix of both talent pools.

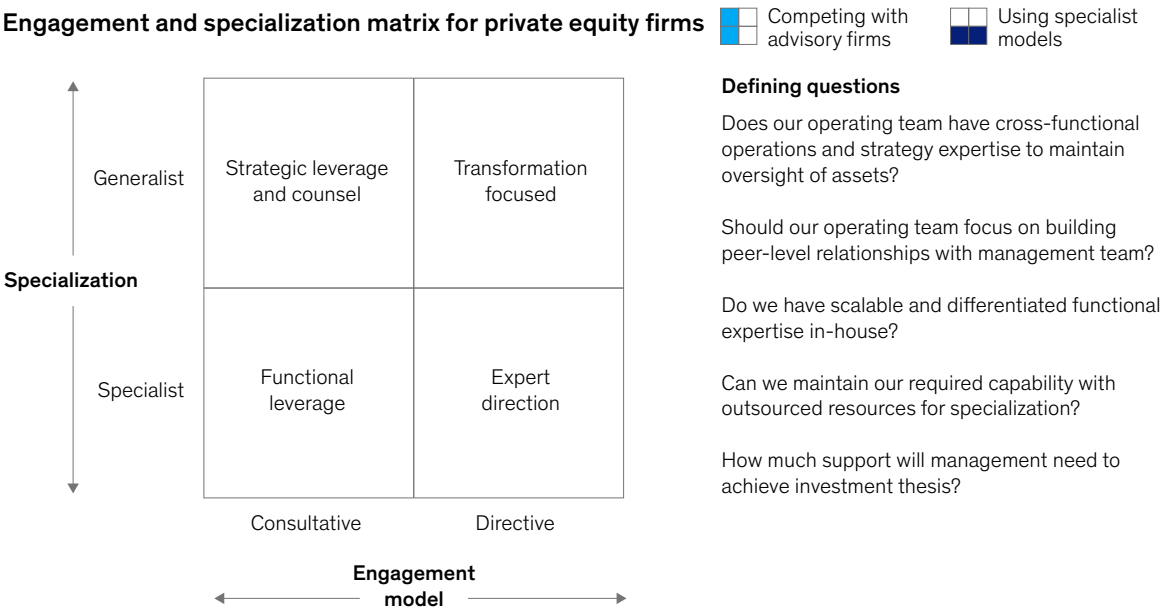
Empower the operating group. In the past, many buyout managers did not have operating teams, so they relied on the management teams in the portfolio companies to fully identify and implement the value creation plan while running the asset's day-to-day operations. Over time, many top PE funds began to establish internal operating groups to provide strategic direction, coaching, and support to their portfolio companies. The operating groups, however, tended to take a back seat to deal teams, largely because legacy mindsets and governance structures placed responsibility for the performance of an asset on the deal team. In our view, while the deal team needs to remain responsible and accountable for the deal, certain tasks can be delegated to the operating group.

Some managers give their operating group members seats on portfolio company boards, hiring authority for key executives, and even decision-making rights on certain value creation strategies within the portfolio. For optimal performance, these operating groups should have leaders with prior C-suite responsibility or commensurate accountability within the PE fund and experience executing cross-functional mandates and company transformations. Certain funds with a core commitment to portfolio value creation include the leader of the operating group on the investment committee. Less-experienced members of the operating group can have consultative arrangements or peer-to-peer relationships with key portfolio company leaders.

Exhibit 1

Private equity funds should consider their internal capabilities when deciding how to partner with portfolio companies on value creation.

Engagement and specialization matrix for private equity firms



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Since the main KPIs for operating teams are financial, it is critical that their leaders understand a buyout asset's business model, financing, and general market dynamics. The operating group should also be involved in the deal during the diligence phase, and participate in the development of the value creation thesis as well as the underwriting process. Upon deal close, the operating team should be as empowered as the deal team to serve as stewards of the asset and resolve issues concerning company operations.

Some funds also are hiring CTOs for their portfolio companies to steer them through large transformations. Similar to the CTO in any organization, they help the organization align on a common vision, translate strategy into concrete initiatives for better performance, and create a system of continuous improvement and growth for the employees. However, when deployed by the PE fund, the CTO also often serves as a bridge between the PE fund and the portfolio company and can serve as a plug-and-play executive to fill short-term gaps in the portfolio company management team. In many instances, the CTO is given signatory, and occasionally broader, functional responsibilities. In addition, their personal incentives can be aligned with the fund's desired outcomes. For example, funds may tie an element of the CTO's overall compensation to EBITDA improvement or the success of the transformation.

Bring best-of-breed capabilities to portfolio companies. Buyout managers can bring a range of compelling capabilities to their portfolio companies, especially to smaller and midmarket companies and their internal operating teams. Our conversations with industry stakeholders revealed that buyout managers' skills can be particularly useful in the following three areas:

— *Procurement.* Portfolio companies can draw on a buyout manager's long-established procurement processes, team, and negotiating support. For instance, managers often have

prenegotiated rates with suppliers or group purchasing arrangements that portfolio companies can leverage to minimize their own procurement costs and reduce third-party spending.

— *Executive talent.* They can also capitalize on the diverse and robust network of top talent that buyout managers have likely cultivated over time, including homegrown leaders and ones found through executive search firms (both within and outside the PE industry).

— *Partners.* Similarly, they can work with the buyout manager's roster of external experts, business partners, suppliers, and advisers to find the best solutions to their emerging business challenges (for instance, gaining access to offshore resources during a carve-out transaction).

Ongoing macroeconomic uncertainty is creating unprecedented times in the PE buyout industry. Managers should use this as an opportunity to redouble their efforts on creating operational improvements in their existing portfolio, as well as new assets. It won't be easy to adapt and evolve value creation processes and practices, but managers that succeed have an opportunity to close the gap between the current state of value creation and historical returns and outperform their peers.

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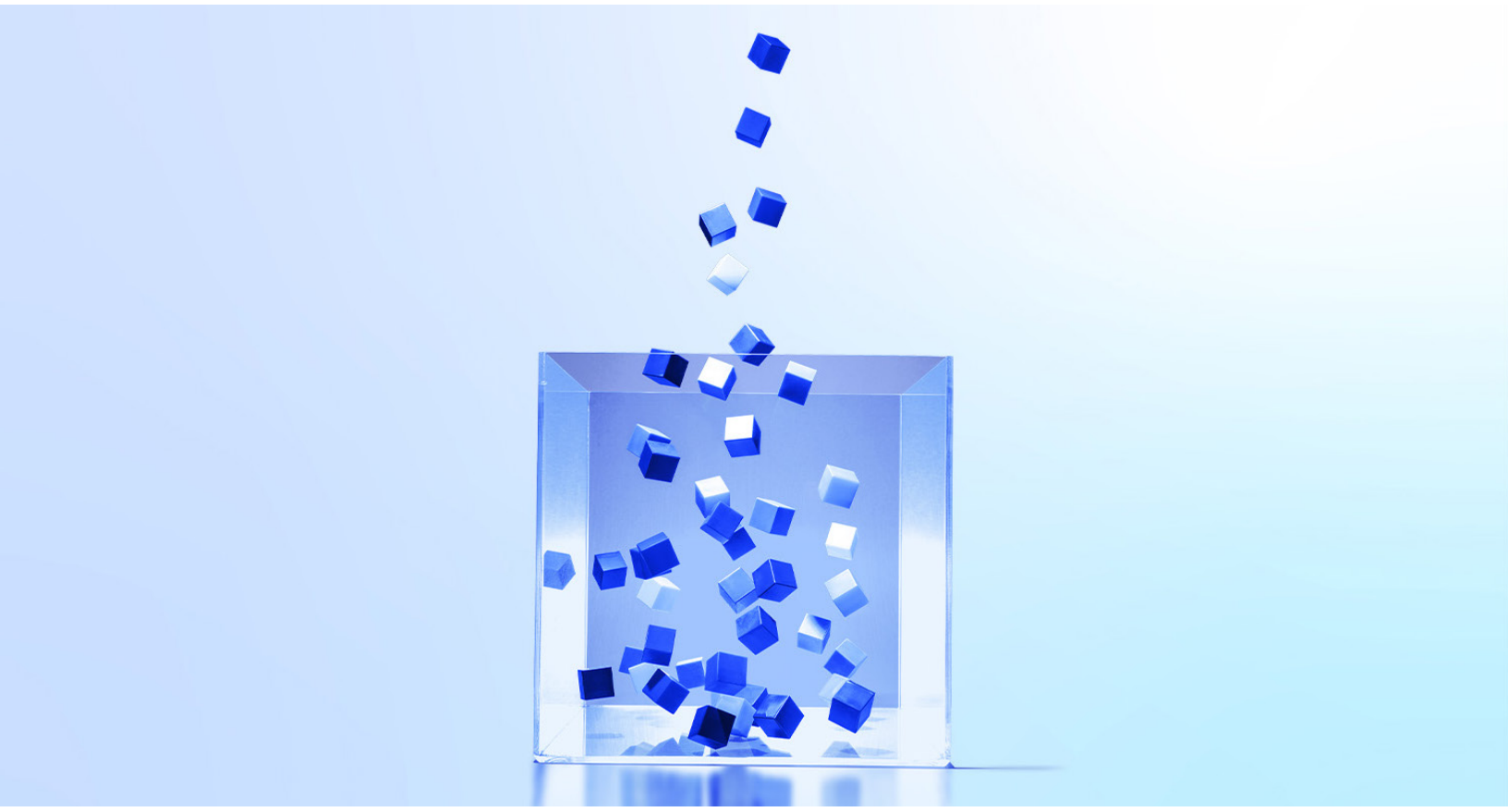
The authors wish to thank Bill Leigh and Louis Dufau for their contributions to this article.

Beyond the balance sheet: North American asset management 2024

Even with markets in ascent, asset managers' revenues have flatlined. But the evolution of balance sheets among banks, insurers, and high-net-worth individuals could unlock the next wave of growth.

by Joseph Lai and Ju-Hon Kwek
with Farhan Banani and Henri Torbey



The North American asset management industry faces a conundrum. The much-anticipated recovery of 2023 took place and appears to be accelerating into 2024, but the industry has struggled to regain its financial footing. Revenues have stagnated in the face of structural outflows from higher-fee active equity mutual funds and a period of adjustment in the private markets, factors that have substantially contributed to industry economics recently. And profitability has remained under pressure, as the industry's cost structure has remained stubbornly rigid.

The good news: markets appear to have adjusted to a new macroeconomic environment, and the momentum has continued through the first half of 2024 amid signs of cooling inflation. Lifted by strong market performance and healthier net flows, the industry's global assets under management (AUM) reached a record $132 trillion as of June 2024, up 8 percent from 2023 and 21 percent from 2022. The bad news: 2023 revenues were essentially flat compared with the previous year, at $228 billion, and profits shrank 5 percent to $73 billion.

Certain asset management companies have been able to achieve above-market growth despite these pressures. Some managers have tapped into new areas of demand to deliver successful products in high-growth segments; others have used their scale and scope to embed themselves as strategic partners to their clients. But share gains amid stagnant industry economics only get organizations so far. Outsize growth needs to come from new pools of assets outside the industry.

Fortunately for the industry, these types of new opportunities are prevalent because of disruption and dislocation in the balance sheets of banks, insurance companies, and high-net-worth investors. By our estimates, these changes could bring the industry $8 trillion to $10 trillion of new managed assets over the next decade, potentially paving new pathways to accelerated growth.

This year's report explores the following six themes:

— *the unevenness of the industry's rebound* from a weak 2022, with considerable variation across regions, channels, and product types

— *the nature of the revenue-neutral recovery* of 2023, driven in large part by lower-priced investment strategies attracting the bulk of recovery inflows while higher-priced investment strategies have shrunk or stagnated

— *the pressures on profitability*, including the upward creep in the industry's cost base, despite 2023 purportedly being "the year of austerity"

— *the shifting basis of competition* as several of the largest asset managers continue to gain market share, and as the traditional focus on investment performance alone is no longer considered a surefire way to succeed

— *an opportunity beyond the balance sheet*—$8 trillion to $10 trillion that could be unlocked as banks, insurers, and individual high-net-worth investors restructure their allocations and holdings in the face of a transformed industry landscape

— *a new agenda for not just surviving but thriving* in this rapidly shifting market environment—an agenda that North American asset managers should consider over the course of the next 12 to 18 months

Our 2024 review of the North American asset management industry shows an interesting dichotomy. On one hand, it's a mature market defined by intense competition and declining profitability. On the other hand, it's a growing landscape ripe with opportunities that exist just beyond the industry's traditional domain. This report, which includes traditional and alternative asset

managers, draws on the breadth of McKinsey's asset management work, including proprietary data assets, the Global Asset Management Survey, the Global Growth Cube for granular market sizing, and a set of regular "voice of the client" surveys across both wealth and institutional segments.[1]

An uneven rebound

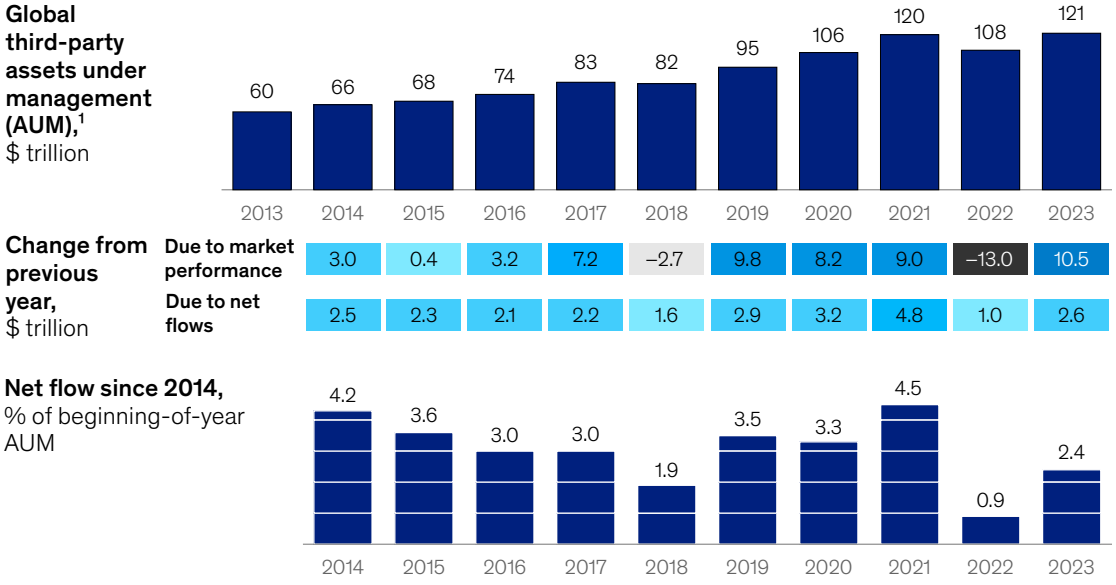
On the face of it, 2023 was a banner year for the global asset management industry—a relief after a dismal 2022. AUM growth in 2023 not only reversed 2022's $12 trillion decline, but global AUM reached a record $121 trillion (Exhibit 1). Net new money entering the industry rather than market appreciation drove a meaningful portion of this uplift. Net flows in 2023 accounted for 2.4 percent of beginning-of-year AUM, more than doubling 2022's 0.9 percent figure, though still falling short of the past decade's 3 to 4 percent average. Yet this apparent rising tide didn't lift all boats, with select geographies and client segments disproportionately benefiting from the improved environment.

Americas and Asia–Pacific turning the corner

The Americas and the Asia–Pacific region accounted for over 90 percent of global net flows in 2023. In contrast, the recovery in Europe, the Middle East, and Africa has been limited, with net flows less than a quarter of what they were four years ago (Exhibit 2).

Exhibit 1

The asset management industry has recovered from a 2022 decline, with assets under management rebounding to 2021 levels.



[1]42 countries from Africa, Asia–Pacific, Europe, Latin America, Middle East, and North America.
Source: Global Growth Cube by McKinsey

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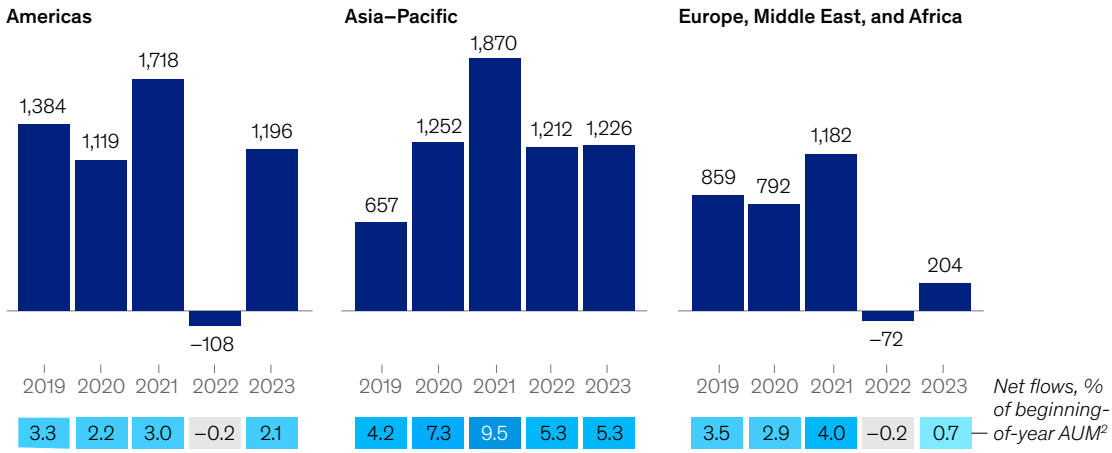
[1] Unless otherwise noted, the data in this report come from these sources.

Exhibit 2

Net flows have rebounded strongly in the Americas, been flat in Asia–Pacific, and improved slightly in Europe, the Middle East, and Africa.

Net flows, by region,[1] $ billion



[1]42 countries from Africa, Asia–Pacific, Europe, Latin America, Middle East, and North America.
[2]Assets under management.
Source: Global Growth Cube by McKinsey

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Asia–Pacific turned in the best results: it was the only region delivering an organic growth rate that was higher in 2023 than it was prior to the COVID-19 pandemic. China—perhaps counterintuitively, given its current economic slowdown—represented 80 percent of Asia–Pacific's net flows, up from about 60 percent in 2019. The organic growth of the Chinese asset management market has been driven by the confluence of the following factors: a build-up of personal wealth during and after the pandemic, driven by a shift toward saving versus consumption; a diminished allocation to real estate investments; investors' move to a more cautious orientation, which drove flows to fixed income and money market funds; and growth in ETFs as a substitute for single stock trading and active equity fund allocation.

Healthy wealth

The recovery's unevenness was mirrored in client segments. High-net-worth individuals continued to be the industry's most important source of organic growth. Buoyed by ascending asset values, rising wages, and continued low unemployment, the wealth channel accounted for nearly half the industry's global net flows, punching above its 44 percent weighting in AUM. Adding the defined contribution segment's 13 percent portion, individual investors accounted for over 60 percent of the industry's net flows.

Corporations were the second-largest client segment, contributing 22 percent of net flows. In large part, this was because higher interest rates propelled the liquidity that had built up on corporate balance sheets over the past few years into cash management solutions, such as money market funds and active fixed income. Insurance was the only core institutional segment that shined, accounting for 12 percent of global net flows. It overshadowed all other institutional segments (including defined benefit pension plans, endowments and foundations, and sovereign wealth funds), which contributed less than 10 percent of net flows combined.

Resurgence of fixed income and passive equities

The recovery of demand in terms of asset classes and strategies was similarly bifurcated. Passive equity and fixed income (both active and passive) have been the big winners in the industry's rebound, which gained steam in November 2023 as the inflation outlook began to stabilize. Fixed-income flows showed interesting patterns as the sizable passive inflows that marked 2023 were joined by an accelerating stream of active inflows in the first half of 2024. In fact, US active fixed income notched double the flows that passive did in this period, suggesting a comfortable coexistence of active and passive strategies in this asset class (Exhibit 3). The picture in active equities was more one sided, with the continuation of the decade-long trend of outflows.

Mostly quiet in private markets

In private markets, 2023 fundraising by North American managers declined 18 percent from 2022. Numbers were down across private equity, real estate, and infrastructure as the industry struggled with a paucity of exits in an environment of low transactional activity and hence a shortage of distributions to fund new commitments. Private credit was a bright spot in private markets, with a 4 percent increase in fundraising over the same period.

Private market fundraising in the first quarter of 2024 was in line with the 2023 level. Annualizing this volume through the rest of the year suggests that this year's numbers will be similar to last year's. However, to put these results in context, 2023 was still the third-best fundraising year on record. The largest private market asset managers, in particular, showed strength, highlighting the steady base of support for this part of the market.

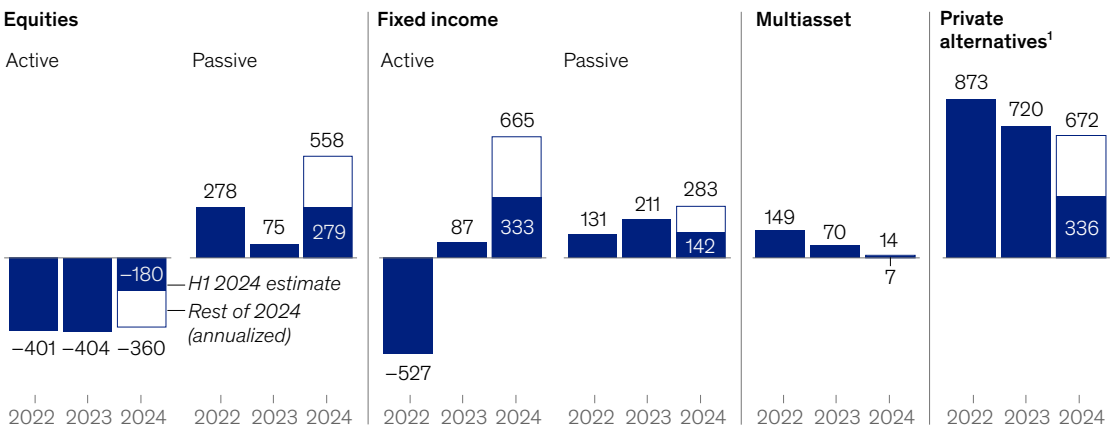
Cash on the sidelines

Beyond the recovery in flows, there's considerable pent-up energy in the system in the form of cash sitting on the sidelines that could be unlocked in the right macroenvironment to create more upside for the asset management industry. Using individual investors as an example, as of the first quarter of 2024, US households had accumulated $8.5 trillion in deposits and money market funds at elevated rates, which meant that, for the first time in over a decade, investors were being paid to wait on the sidelines.

Exhibit 3

Most asset classes showed a strong rebound in net flows in the first half of 2024, with active equities being a notable exception.

US net flows, by asset class, $ billion



[1]Annual fundraising for North America.
Source: Preqin; Global Growth Cube by McKinsey

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Based on historical averages of household balance sheets over the past 50 years, this pool of assets includes approximately $1.5 trillion of excess cash that has the potential to be invested in managed products. With flows in both fixed income and passive equities picking up at the end of 2023 and the early part of this year, some of this cash already appears to be making its way to the asset management industry.

A revenue-neutral recovery

While more resilient markets and net flows should be a boon for the industry, many asset managers may feel as if they have leaky boats in this rising tide. Record AUM hasn't led to record revenue. Despite the industry adding $13 trillion, or 12 percent, in AUM over the course of 2023, revenues remained flat. That's in part because the 2023 market recovery didn't pick up steam until the fourth quarter, but another factor is the continuation of shifts in product demand away from higher-cost products toward lower-cost asset classes and strategies.

Moving to lower-fee solutions

Those shifts can be seen in net flows. The 2023–24 recovery in net flows has been concentrated in lower-yielding passive and fixed-income products. Meanwhile, higher-yielding products, including active equities, have been in outflows.

To illustrate the financial importance of this change, consider equities. Over the course of 2023 and the first half of 2024, open-ended active equity funds experienced about $500 billion in outflows, while passive equities received roughly corresponding inflows. Given the difference in these two asset classes' weighted average revenue yields—revenues divided by AUM—the industry lost an estimated $2.5 billion in revenues because of this shift. Across all public-market asset classes, in the year and a half since the start of 2023, new money has been entering the industry at a fee rate[2] that's over 20 percent lower, on average, than that of the current pool of assets.

Finding a silver lining for active management

While active management has clearly faced challenges, new product vehicles that are innovating with features beyond those offered by mutual funds are providing some relief. Among active products in the United States, ETFs, collective-investment trusts, and separately managed accounts gained net inflows representing about 65 percent of mutual fund net outflows over the course of 2023 and the first half of 2024. This indicates not just a shift in demand for strategies but also a change in client preferences for how those strategies are packaged and delivered. This latter shift has been driven by the tangible benefits—including tax efficiency, liquidity, ease of execution, and lower costs—that these alternative product structures offer to end investors and intermediaries (see sidebar, "Active ETFs come of age").

Margins under pressure

Despite the recovery in markets and net flows, the North American asset management industry's profitability fell over the course of 2023. The industry's pretax operating profit margin declined two percentage points between 2022 and 2023 (Exhibit 4). Profitability has been pushed lower by flat revenues and an approximately $4 billion, or 3 percent, increase in costs.

Climbing costs

Although multiple industry headlines have suggested that 2023 was a year of austerity, overall spending in the industry rose 3 percent, creeping back up to the record level of 2021. Spending increased across the board, with 3 to 5 percent increases across all functional areas except investment management, where it increased a more modest 1 percent.

These cost increases were widespread. According to our 2023 survey of North America-based asset managers, 60 percent boosted spending over the prior year. Among the largest companies, those with $1 trillion or more in AUM, the share was more than

[2] Weighted average revenue yield.

Active ETFs come of age

Active ETFs—launched in 2008 and accounting for less than 2 percent of the ETF market share during their first ten years—have recently moved from the asset management industry's periphery to its core, per McKinsey analysis, data, and research. This product vehicle achieved record net flows over each of the past four quarters, with flows in the first quarter of 2024 more than double those of a year earlier. In fact, active ETF inflows were equivalent to approximately 10 percent of mutual fund outflows in 2022, climbing to about 20 percent in 2023 and more than 50 percent as of June 2024. This growth has provided a boost for active managers that have moved quickly to catch the expanding client demand for this vehicle.

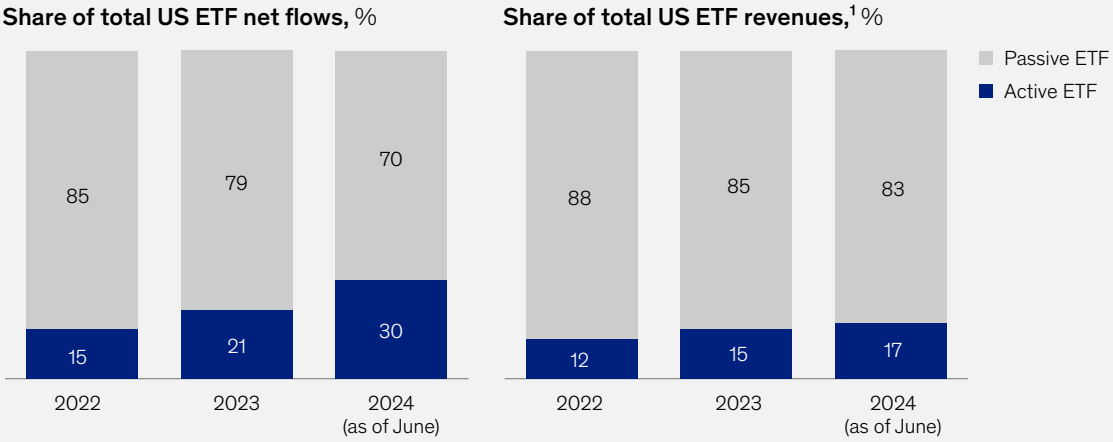
Within the broader ETF category, which continues to be a major driver of growth in the industry, active ETFs are taking on a larger role in client portfolios and industry economics. While active ETFs in the United States account for only 7 percent of ETF assets under management (AUM), they represent nearly a third of the category's net flows and nearly a fifth of its revenues (exhibit). Individual ETFs are also shifting from niche strategies to category leaders, with the average size of the top 50 active ETFs in the United States (by net flows) reaching $6.8 billion in AUM as of June 2024, up from $3 billion in January 2021.

We analyzed these top 50 active ETFs to understand the underlying supply-and-demand drivers that have contributed to the category's rapid growth over the past two and a half years, uncovering the following insights:

- *Product innovation to address new client needs* using the active-ETF structure has accounted for nearly half of net flows. Examples include using covered call strategies to produce income and providing efficient access to leveraged loans through collateralized loan obligation strategies.
- *Broad-based portfolio-building blocks* have accounted for 40 percent of net flows. This share has been driven both by an increase in product availability, as many of the largest active managers have recently made some of their strategies available in active-ETF formats, and as financial intermediaries have become more comfortable with using the structure in portfolios.
- *Conversions of mutual funds to ETFs* have accounted for the remaining 10 percent of net flows, suggesting that, while these conversions represent an important component of active-ETF AUM, they aren't yet a major driver of organic growth.

Exhibit

Active ETFs are starting to represent a critical part of the overall ETF category in the United States.



[1]Calculation based on average assets and fees at individual-fund level. Individual results aggregated at industry level.
Source: Morningstar; US Federal Reserve

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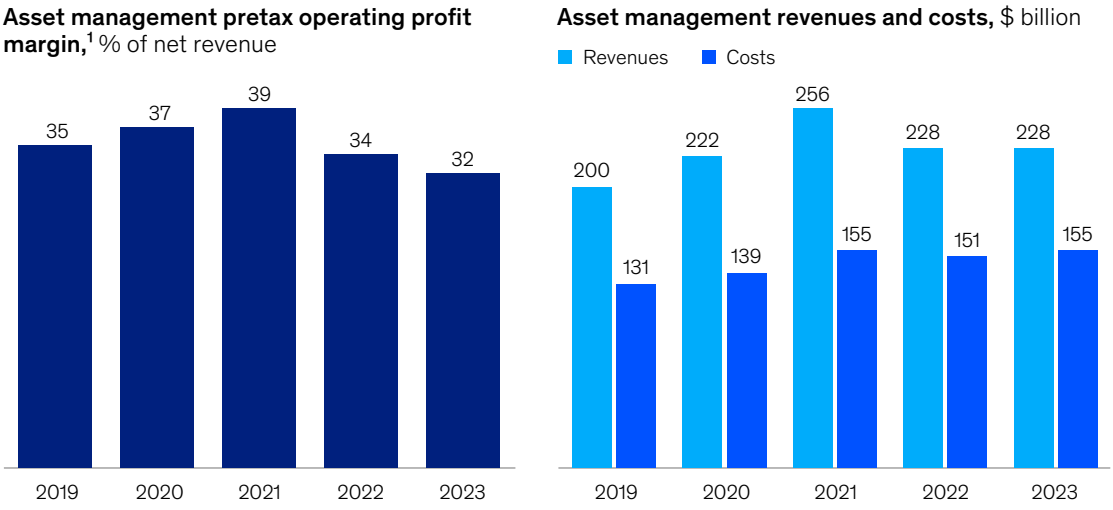
Exhibit 4

The North American asset management industry's profitability has been weighed down by flat revenues and rising costs.



Note: 2023 figures are estimates.
[1]Revenue-weighted average of pretax operating profit margins for companies in survey sample and select publicly listed asset managers.
Source: Global Growth Cube by McKinsey; McKinsey Global Asset Management Survey; McKinsey analysis

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80 percent. Despite flat to declining revenues for many organizations, much of this spending growth is indicative of some unfinished business: both the much-needed simplification of asset managers' operating models that we have discussed in previous reports and the need for asset managers to adapt their businesses to a rapidly changing environment.

Cost of complexity

Our analysis of 2023's cost increases points to increased complexity in asset managers' business and operating models as an underlying root cause of the higher costs. Many asset managers are saddled with the consequences of tens (and in some cases, hundreds) of bespoke decisions that were made about their product shelves, client engagement models, and operating and technology processes in previous years of plenty. These decisions have led to the accrual of a compounding operational debt, similar to the concept of tech debt, that has pushed up the costs of simply running the business. In parallel, these managers have had to ratchet up spending to keep pace with the emergence of new technology, such as generative AI (gen AI); increasing demand for a broader range of investment solutions; and a more fragmented client base.

Many organizations confronted these challenges with highly publicized layoffs. But concurrently, asset managers also added staff, specifically investment and sales specialists, operational roles to support new strategies in areas such as private markets, and client service and marketing staff, resulting in net increases in overall headcount. Net new headcount accounted for approximately a quarter of the increase in industry costs from 2022 to 2023. Extrapolating from our 2023 survey of North American companies, the industry's workforce rose by about 2,400 employees, or 1.7 percent.

By function, technology was the largest driver of cost increases, accounting for about a quarter of total cost growth. Companies have been modernizing their cloud programs, upgrading legacy systems, developing new applications, and incorporating gen AI. In addition, inflation has increased spending on software, hardware, data, and outsourcing.

A shift in the basis for competition

This past year marked the continuation of another trend that has been playing out over the past decade: leading organizations are attracting a growing share of flows. Over the past four years, the share of US flows (or fundraising, in the case of private markets) captured by the top five managers has grown by anywhere from two to nine percentage points, depending on the asset class (Exhibit 5). The sole exception is passive strategies, for which concentration of flows has ticked down slightly from an extremely high starting position.

Beyond the industry-level rebounds in net flows, what accounted for leading asset managers' success in 2023? We analyzed the financial results of the 30 largest asset managers (measured by AUM) in North America to identify the characteristics of companies that consistently generated the most substantial net-flow growth. Perhaps counterintuitively, we found very little correlation between the average prices that these asset managers charged for their products and their ability to capture flows over the past 18 months. Instead, we found that organizations that achieved organic growth during this period fell into four broad archetypes:

— *large, at-scale manufacturers* of passive investment strategies that rode the continued wave of client demand, particularly for ETF strategies that were useful for positioning portfolios in a more "risk on" environment

— *distribution powerhouses* with privileged access to clients—for example, through ownership of wealth or retirement channels and through strategic partnerships with distributors

— *investment solution innovators* that were able to design and rapidly launch differentiated solutions to address a range of unmet and emerging client needs

— *alpha generators* with a consistent record of investment outperformance and a differentiated investment system well understood by clients

Although these broad archetypes have been successful for some time, their prevalence has changed. Two decades ago, the most common archetype for a leading asset manager was the alpha generator. Since 2023, alpha generators have been the least represented archetype among companies generating meaningful organic growth, suggesting a subtle shift in the basis of competition. In contrast, the archetypes that emphasize distribution or product-related capabilities have grown in prevalence.

Opportunities beyond the balance sheet

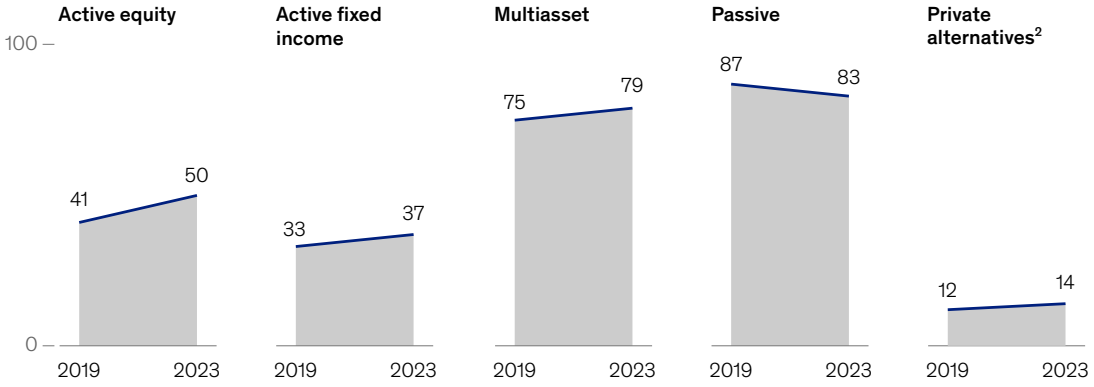
The picture of the industry in 2024 is one of cautious optimism about the accelerating rebound but also awareness of the uneven growth amid industry-wide economic pressures, particularly on revenues and costs. Growth is clearly possible through the conventional pathways of superior execution of investment and distribution activities in traditional markets, but these pathways are getting more competitive. Outsize growth requires looking beyond the zero-sum game of share gain in a static market to find new pools of assets that can increase the size of the industry's pie.

The good news for the asset management industry is that attractive opportunities are opening up through a balance sheet restructuring across the bank, insurance, and high-net-worth investor segments. This reorganization is being driven by changed macroeconomic realities, including elevated interest rates and an evolving regulatory environment. Here are a few trends to watch across client segments:

Exhibit 5

Leading managers are increasing their share of flows in active assets while still attracting the bulk of flows in passive assets.

Top 5 asset managers' share of US long-term net flows, by asset class,[1] %



[1]Includes mutual funds and ETFs; excludes money market funds and funds of funds. Based on funds experiencing net inflows in given period.
[2]Global annual fundraising.
Source: Morningstar; Preqin; McKinsey analysis

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— Banks are *curtailing their lending activities and looking to offload more loans to third parties* because of higher capital requirements from regulators. Private-capital companies are stepping in to fill the void and using longer duration institutional capital for funding.

— Insurers are drastically *shifting the way they invest their general accounts* as private capital moves further into life insurance and annuities.

— Wealth intermediaries are *increasing private-market allocations* for their clients as the maturing and scaling of the private-market retail ecosystem—with new vehicle constructs, sales infrastructure, and portfolio construction tools—enables material shifts in demand.

These trends are dislodging substantial assets from their traditional homes on institutional and retail balance sheets. By our estimates, this could bring $8 trillion to $10 trillion of US AUM into the asset management industry over the next decade (Exhibit 6). These opportunities beyond the balance sheet would represent a roughly 15 percent expansion of the addressable market for asset managers in North America.

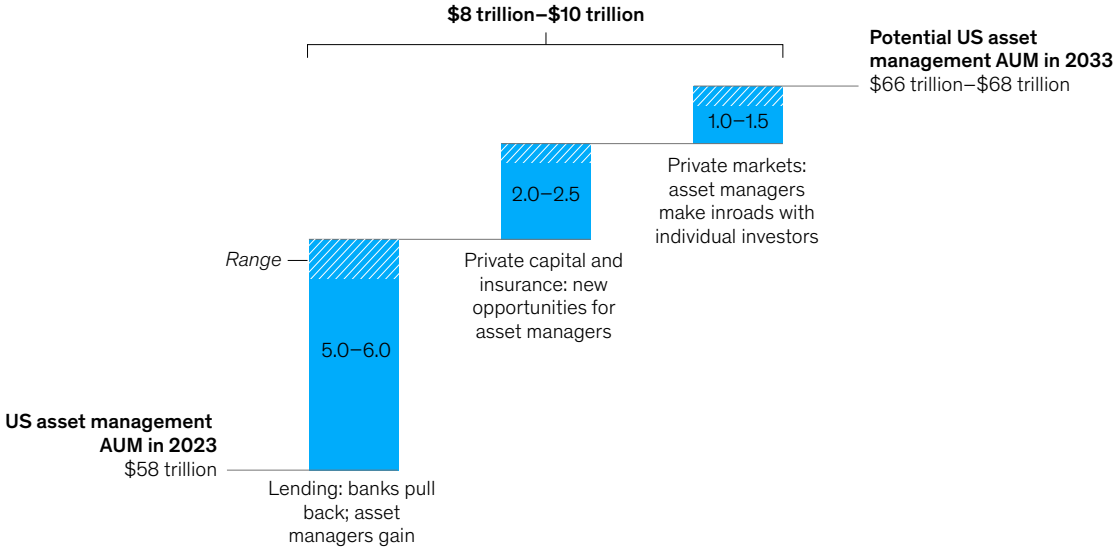
Lending: Banks pull back, and asset managers gain

Big banks began pulling back from lending in the wake of regulations, including the US Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the global Basel III standards, both implemented after the 2007–09 financial crisis. US guidelines on leveraged loans, also introduced after the financial crisis, prompted banks to step back from leveraged lending, creating a gap that was quickly filled by the fast-growing private-credit industry.

Exhibit 6

Asset managers could gain $8 trillion to $10 trillion in US assets under management by 2033 with banking, insurance, and wealth shifts.

Potential change to US asset management industry's AUM[1] in 2023–33, $ trillion[2]



[1]Assets under management.
[2]As of year-end 2023; excludes any impact from market performance.
Source: Global Growth Cube by McKinsey; McKinsey analysis

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Private-credit AUM grew tenfold between 2007 and 2023, reaching $1.7 trillion. Over the same period, US banks experienced a two-percentage-point reduction in balance sheet exposures to commercial and industrial loans. The growth of these nonbank providers as major sources of lending is entering its next wave, driven by three developments:

— Regulators are aiming to *complete the implementation of a global banking overhaul* begun after the financial crisis, a process known as the "Basel III endgame." The new regulations, meant to ensure that banks can survive substantial loan losses, are expected to go into effect starting in 2025. Uncertainty remains about the regulations' final shape. If they are implemented in their current format, banks will be required to set aside more capital for certain lending activities.

— Banks are increasingly eager to *manage their exposure to longer-dated lending*, with the increased deposit volatility of the past few years increasing the complexities of managing long-duration assets on their balance sheets.

— Nonbank providers are making *inroads in lending markets*, especially in areas that don't require a large network of branches or other brick-and-mortar infrastructure to reach borrowers. Examples include aircraft loans, railway loans, sponsor-backed commercial real estate, and sponsor-backed infrastructure.

As of 2023, US bank balance sheets held approximately $23 trillion of assets. As the trends described in this report play out, assets valued at roughly $5 trillion to $6 trillion could transition away from the banking industry over the next

decade, compared with the roughly $2 trillion in assets that left banking over the past decade. Asset classes with the highest propensity to move off bank balance sheets include certain types of residential mortgages, such as those for nonprimary residences and those with high loan-to-value ratios; higher-risk commercial real estate; predevelopment project finance; and certain types of asset-backed finance, such as aircraft financing, auto loans, and student loans (Exhibit 7). Some types of investment-grade corporate lending could also continue to shift from banking into the asset management industry.

The movement of these assets beyond the balance sheet creates a funding opportunity for the asset management industry in the form of an expanded set of credit products in three areas:

— *substitutes for active-fixed-income products*, especially investment-grade ones, with a total addressable market of $6 trillion

— *multiasset mandates*, especially when framed as public–private credit exposures, with a total addressable market of $500 billion

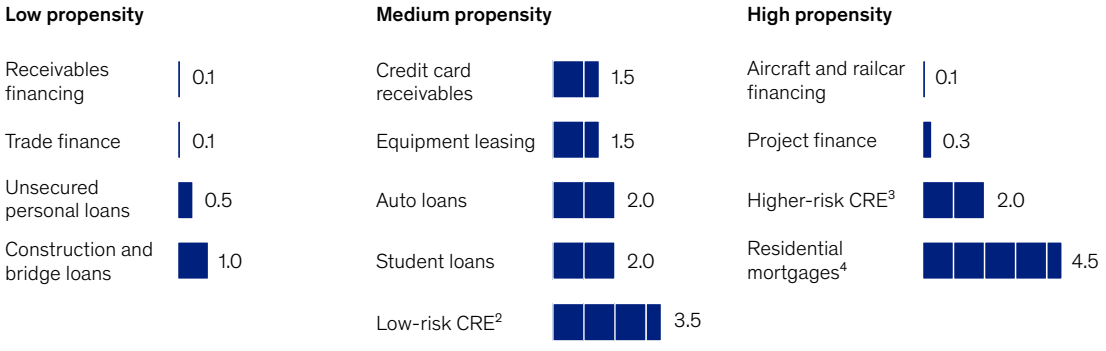
— *traditional private-credit products* supported by a broader range of collateral and durations, with a total addressable market of $2 trillion

To seize this opportunity, asset managers will need new capabilities that enable them to gain access to new pools of assets and new funding sources at a meaningful scale. Accessing assets can take various forms, such as strategic forward-flow partnerships with banks, acquisitions of bank books, and even loans to clients made by asset managers themselves. The most important funding sources for this growth will be insurance and wealth capital.

Exhibit 7

Assets might shift off bank balance sheets over the next ten years, creating opportunities for asset managers.

Outstanding loan volumes in 2022, by propensity of relevant asset class to move out of banking system,[1] $ trillion



[1]Estimated based on "Basel III endgame" regulatory changes, banks' liquidity and duration mismatch, and nonbank providers' ability to originate loans at scale in the relevant category. Within each asset class, certain subsegments are more likely than others are to move out of banking system, based on expected regulatory impact.
[2]Commercial real estate. "Low-risk CRE "defined as CRE loans that meet US regulatory requirements and have a loan-to-value (LTV) ratio <80%.
[3]CRE loans that don't meet US regulatory requirements and CRE loans that have LTV ratio >80%.
[4]Shift to originate-to-sell model most likely for jumbo mortgages for nonprimary residences, mortgages with high LTV ratios, and mortgages for lower-tier high-net-worth clients
Source: US Federal Reserve; Global Banking Pools by McKinsey; McKinsey analysis

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Private capital in insurance: New opportunities for asset managers

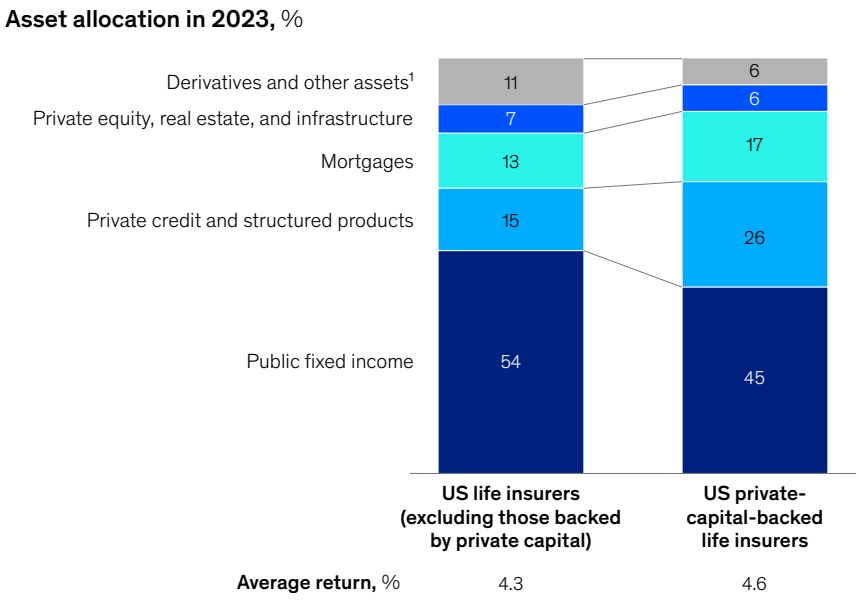
Private capital is moving deeper into the world of life insurance and annuities, opening further opportunities for asset managers. According to McKinsey analysis, insurers backed by private-capital companies have gathered nearly $700 billion in assets in the United States and now manage roughly 13 percent of the market for life insurance and annuities. And that number is growing rapidly.

In 2023, this segment of the insurance industry accounted for 35 percent of new sales in fixed and fixed-indexed annuities, up from 7 percent in 2011. Globally, private-capital companies have recorded more than $900 billion in transactions to date by buying life and annuity liabilities. These transactions are typically structured in the form of a "sidecar," a structure in which an insurer transfers liabilities into a new vehicle that's capitalized by that insurer and third-party investors. The US market now contains more than a dozen sidecars focused on life and annuity liabilities.

The convergence of private capital and insurance represents a meaningful shift in the paradigm of what it means to manage an insurance balance sheet. Capital optimization processes are grounded in a careful choice of regulatory jurisdiction and a relentless focus on asset liability management. Through these processes, insurers backed by private capital allocate an additional 11 percentage points of their general accounts to private credit and structured products and an additional four percentage points to mortgages, displacing plain-vanilla holdings of fixed-income securities (Exhibit 8).

Exhibit 8

Insurance companies backed by private capital have different investment patterns from traditional insurers.



[1]Premium notes, contract loans, securities lending reinvested collateral, and aggregate write-ins for invested assets not classified elsewhere.
Source: S&P Capital IQ; McKinsey analysis

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The results are yields that are up to 50 basis points higher than those of traditional insurers, enabling these next-generation insurers greater flexibility in price and distribution. This allows them to expand their market share. For private-capital owners, these insurance companies serve as attractive sources of permanent capital, providing both an anchor and a fuel for the growth of their credit franchises.

To put the size of this opportunity in perspective, if the entire US life insurance industry were to adopt the strategic asset allocation of private-capital-backed insurers, this could represent an additional $700 billion in assets deployed in private-market strategies. Traditional insurers have begun to adapt to this evolution by building and scaling new asset management and capital solutions capabilities themselves and by teaming up with asset managers.

The addressable market for these liabilities could triple as more private capital flows into the insurance sector and the trend globalizes. We estimate that $2.0 trillion to $2.5 trillion in additional liabilities could be reinsured under this model in the next ten years, with the bulk coming from the United States and substantial portions from Japan and the United Kingdom.

Asset managers seeking to participate in this opportunity face strategic options ranging from capital-heavy pathways, such as buying an insurer or taking a minority stake in one, to capital-light options, such as sidecar partnerships, forward-flow partnerships for private credit, and scaling of traditional insurance solutions mandates. The prize for capturing a slice of this fast-growing market isn't simply a new set of opportunities for revenue growth. It's also the chance to build considerable ballast into their business models through the addition of permanent capital.

Private markets: Asset managers make inroads with individual investors

The asset management industry has been talking about the promise of retail alternatives for over a decade. The theory of the case is that retail investors are severely underallocated to private-market investments relative to their institutional peers. If the roughly 5 percent allocation to private markets in individual-investor portfolios today could be amped up anywhere near the more than 15 percent allocation that's the norm in institutional portfolios, one of the most exciting growth opportunities in the industry would be unlocked. That's especially true because the long-term flow dynamics of the individual-investor segment are expected to be two to three times larger than those of core institutional channels.

Over the past six years, the promise of retail alternatives, particularly those related to private-market strategies, has begun to bear fruit in a considerable way. In 2023, fundraising for nontraded real estate investment trusts (REITs) and business development companies (BDCs) in wealth-related channels totaled $28 billion. That's more than five times the equivalent figure in 2018. Both end clients and their advisers are indicating an unprecedented willingness to allocate more of their portfolios to private markets. Extrapolating from current trends, the asset management industry could receive an additional $1.0 trillion to $1.5 trillion in net new AUM in private markets over the next ten years thanks to individual investors. Additionally, existing portfolios could be appreciably reallocated to focus more heavily on private markets.

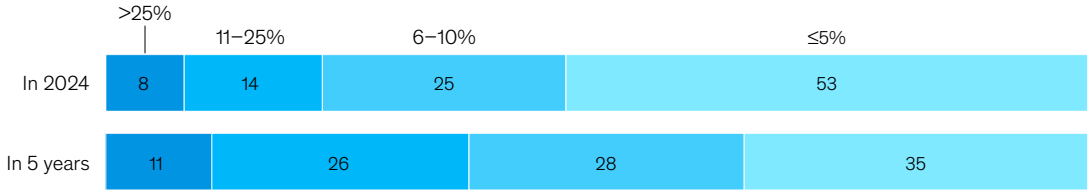
What accounts for this inflection point for private markets in wealth after so many years? In our view, the following three drivers have created a structural shift:

— Vehicle innovations and the rise of semiliquid products have *helped remove the buying frictions associated with institutionally oriented closed-end fund structures* that, in the past, had created considerable operational burdens around tasks such as managing liquidity (Exhibit 9). Private-market product design has also matured to meet a wider range of client needs beyond the promise of absolute return. For example, multiple alternative products now meet needs such as income, liquidity, tax efficiency, and personalization that are essential to effectively serving individual-investor segments.

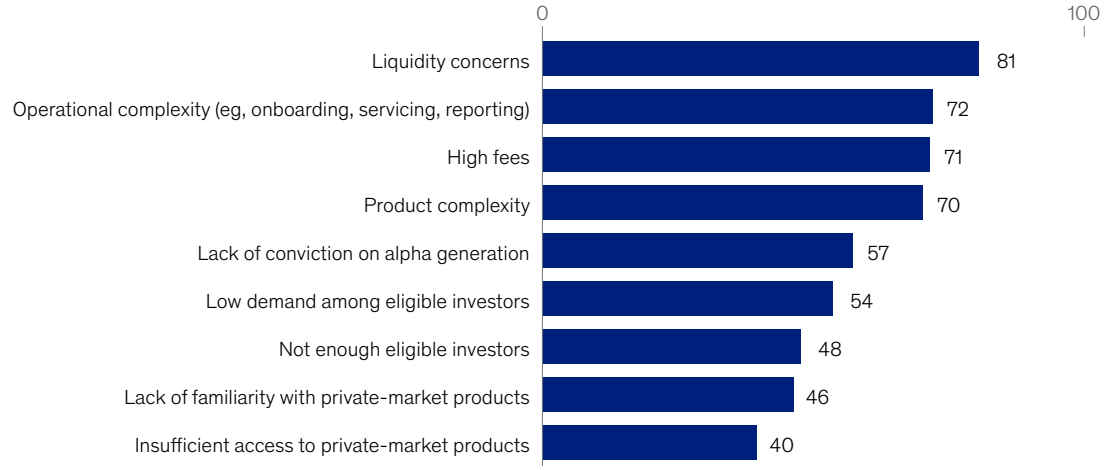
Exhibit 9

Financial advisers expect to increase allocations to private markets but face hurdles to broader adoption.

Average share of clients' portfolios invested in private markets,[1] % of advisers



Factors limiting advisers' allocations to private markets, % of advisers investing in private markets who rate factor as a hurdle[2]



[1]Among clients with exposure to private markets.
[2]Advisers who rate each factor 5, 6, or 7 on 1–7 scale, with 1 being "not a hurdle" and 7 being "a significant hurdle."
Source: McKinsey Financial Advisor Customer Experience Survey, ~1,800 participants, June 2024

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— The new vehicles are reaching critical scale, allowing them to be *approved more easily for inclusion on even the largest wealth intermediaries' investment platforms*. We estimate that the market for semiliquid alternative products in the US wealth segment of the asset management industry has grown 15 percent between 2016 and 2023 to reach $600 billion in gross asset value. While the top three products by AUM across nontraded REITs, interval funds, and BDCs have grown more than 50 percent since 2020, a long tail of smaller products could benefit from wealth managers seeking to diversify and differentiate their product offerings to clients.

— Large investments in the private-market-wealth ecosystem—salesforce, infrastructure, and education—are now *supporting end investors and their advisers in their adoption of private-market products*. To give a sense of proportion of the ecosystem's growth, the world's five largest alternative asset managers by AUM have more than doubled their wealth-oriented distribution forces since 2021.

To date, large alternative asset managers have captured the largest "mindshare" and share of flows in the industry. In our surveys, financial advisers highlight the strengths of these companies' product records, their wholesalers' depth of knowledge, and

Traditional asset managers benefit from a deep trust and long history of client relationships.

the rich resources (such as marketing materials and thought leadership) that they make available to advisers. However, traditional asset managers do have some competitive advantages to build on. Our research shows that advisers increasingly prefer to work with a few trusted asset management partners to cover all their needs. This is a boon for traditional asset managers, which benefit from a deep trust and long history of client relationships.

The private market opportunity with individual investors has meaningful room to run beyond the core wealth channels that it's starting to penetrate. Alternative asset managers are pursuing a swath of opportunities to drive greater adoption among individual investors. These include launching innovative products and lowering minimum-investment thresholds in the affluent and mass-affluent space, embedding private markets in defined contribution or insurance wrappers, developing private-market model portfolios, and engaging in strategic partnerships with traditional managers to access a salesforce or develop public–private products.

A new agenda for thriving, not just surviving

Today's asset management industry operates as a two-speed market. It's in equal parts a place of intense competition with challenged product segments and a market that's ripe with promise and plenty, particularly in seizing opportunities beyond the balance sheet. To not just survive but thrive in this new environment, asset managers can consider embracing a four-part agenda as they head toward 2025:

— *Tap into durable sources of demand.* Growth in the asset management industry today is highly uneven by geography, client segment, asset class, and product structure. Companies that aspire to industry leadership need to reposition their businesses to reach areas replete with sustainable, long-term demand drivers. In some cases, this will require making thoughtful investments to build capabilities in new areas. In others, it may require inorganic action, such as M&A and partnerships.

— *Create privileged access through partnerships.* Asset managers with privileged access to assets, whether through ownership or partnerships with origination platforms, will have an advantage in meeting the needs of institutional and individual clients. In addition, companies that can forge strategic partnerships with distributors, gatekeepers, and technology providers will have differentiated access to clients and minimize the risk of disintermediation. To do this successfully, asset managers will need to build stronger business development and partnership capabilities.

— *Manage complexity and cost.* Adapting to the shifting market environment has created additional complexity in asset managers' operating models. To improve operational effectiveness and prevent rapid cost growth, asset managers will need to do two things. First, they will need to make hard decisions about prioritization, including where not to compete. Second, they will need to invest in structures and processes that can scale when businesses expand not just twofold but tenfold.

— *Unlock the potential of technology.* Advances in technology, especially gen AI, are making it possible for asset managers to notably improve productivity and scalability. Beyond offering simple time savings, AI has the potential to unlock insights and create a degree of consistency that can make investment, distribution, and operations teams smarter and lead to better decisions.

After the challenges of the past few years, the North American asset management industry is showing signs of a recovery. Opportunities are available via traditional avenues in the industry but especially beyond them in the broader financial services ecosystem. Seizing these opportunities and achieving or maintaining industry leadership will require bold action.

Joseph Lai is a partner in McKinsey's New York office, where **Ju-Hon Kwek** is a senior partner and **Henri Torbey** is an associate partner; **Farhan Banani** is an associate partner in the Chicago office.

The authors wish to thank Alastair Rami, Andrew Reich, Ben Ma, Edgardo Bonilla, Fuad Faridi, John Spivey, Josue Ulate Chinchilla, Manraj Singh Dhillon, Meg Nguyen, Owen Jones, Rahel Schneider, Rajiv Dattani, Ramnath Balasubramanian, Tracy Vu, Victor Curdi, Victoria Nguyen, Vlad Golyk, and Xiyuan Fang for their contributions to this report.

This report was edited by Jana Zabkova, a senior editor in the New York office.

How institutional investors can gain a performance edge

Christopher Ailman, former chief investment officer of the California State Teachers' Retirement Fund, explains how performance can be enhanced by culture, diversification, and limiting CIO turnover.

In a nearly four-decade career as an institutional investor, Christopher Ailman has experienced multiple economic cycles. As investors navigate one of the most difficult operating environments in history, Ailman, former chief investment officer (CIO) of the California State Teachers' Retirement Fund (CalSTRS), a US public pension fund with a portfolio valued at $331 billion,[1] emphasizes the importance of getting the timing right: "Being right too early is indistinguishable from being wrong."

Ailman, who retired in June, ending his run as one of the longest-tenured CIOs in the world, spoke with McKinsey's Elizabeth Skovira and Marcos Tarnowski about his investing mindset, CalSTRS' approach to portfolio construction, and how organizational culture can create alpha. This interview was edited for length and clarity.

Elizabeth Skovira: The average tenure of a chief investment officer in the US is four years. You've been at CalSTRS for over two decades. What brought you to the role in the first place?

Christopher Ailman: I always said I'd come back to Sacramento for one of two jobs: California Public Employees' Retirement System [CalPERS] or CalSTRS, because they are meaningful to me. My sister, sister-in-law, and now my daughter are all teachers, so I have an affinity for both organizations.

Elizabeth Skovira: 2023 was a tumultuous year, with failed banks, rising interest rates, and global unrest. What lessons are you drawing on from your experience in prior cycles?

Christopher Ailman: This is my first global pandemic, and I don't have a lot of experience with how to restart an economy. In March or April 2000, the global economy was turned off like a light switch, and restarting it has happened in fits and starts. We provided over-stimulus to consumers so that they had enough money. We had high inflation and supply chain shocks.

It is amazing how important it is for the economy to be in a steady state, and we're not there yet; 2024 looks to be a very challenging year to figure all this out. But we are back to the old rules: don't fight the Fed [US Federal Reserve], pay attention to what the Fed is doing in the direction of interest rates, and then try to read the economy.

One lesson over the last 20 years has been that interest rates can go to zero. In the 1990s, you did not believe rates could reach zero, but now the Fed has done it twice. When I look back at my career, I am constantly amazed at the ever-changing markets. History rhymes, but it doesn't repeat, and it's different. You get some gauge and some structure with age, but it doesn't map out the future.

Portfolio allocation amid market volatility

Elizabeth Skovira: You began your career with an inverted yield curve, and here we are again. How are you shifting your portfolio in light of the volatility?

Christopher Ailman: Yes, but not nearly as inverted. I remember when short-term rates were up at 13 percent, thanks to the Volcker rule.[2]

This is a chance for people to continue to look at fixed income and private credit, which look very attractive. You can finally balance your portfolio, but the real challenge in private equity [PE] is the high cost of financing. Everything is priced for perfection. And in real estate, we still don't know how to value an office property, especially between a downtown

[1] As of February 2024.
[2] A federal regulation prohibiting banks from conducting certain investment activities; Volcker Rule, Board of Governors of the Federal Reserve System, accessed March 2024.

‘History rhymes, but it doesn’t repeat, and it’s different. You get some gauge and some structure with age, but it doesn’t map out the future.’

office property and maybe a class B property in a suburban or secondary market. Nobody’s trading and nothing’s moving. The people I talk to are super bullish about valuations, but they’re not doing a lot of transactions. They’re recycling and holding onto their companies. I think that should thaw, but it may take a recession for that to happen.

Elizabeth Skovira: What’s your view on how private markets will fare in 2024? What do you hope for from your managers in an environment like this?

Christopher Ailman: I hope for a balance of purchasing and selling companies, and a traditional market flow. If managers just draw the capital and start investing and buying companies, many of us will be way over our allocation.

I know of investors that are thinking about selling assets for liquidity reasons, and also to reemploy capital. People want some flexibility. If you’re an endowment right now, you were probably already overweight in PE or venture capital, and now it’s a huge amount of your portfolio. Unless you get some distributions, you’re going to have to tap into your liquid markets to commit to beneficiaries. So we’re muddling along. People are surviving, but liquidity continues to be constrained.

On the other side, you’ve got the sovereign-wealth fund of Norway talking about allocating money into PE for the first time,[3] and GPIF [Government Pension Investment Fund] in Japan looking to increase its exposure to the asset class. Even at 1 to 2 percent, or as much as 5 percent allocation, you’re talking about $40 billion to $60 billion of new money flooding into PE. So that market is going to be viable, with more people coming in with new money and those with established portfolios looking for liquidity opportunities. Hopefully, we will see some nice spring thaw where it loosens up slowly, but not a dam break, where all of a sudden we get a lot of write-downs and acquisitions.

Managing climate and diversification risk in the portfolio

Marcos Tarnowski: The breadth of risks and the level of complexity that CIOs face today is striking. How do you balance the need to diversify your portfolio in order to capitalize on opportunities arising from megatrends while also safeguarding your members’ retirement capital?

Christopher Ailman: It is a good point, and I think diversification can go a bit too far. When I look at our emerging-market exposure, we are exposed to 42 countries. I can tell you that countries numbered 40, 41, and 42 are not going to move the needle for us.

Take the energy transition issue, for example, which is a massive shift over the next ten to 20 years that we can all take advantage of. But we can’t get too far ahead of it. Just because you transition your portfolio doesn’t mean you’re going to get the timing right. Trying to measure where the world’s at, and where your portfolio is at on carbon, is really difficult right now.

[3] Victoria Klesty and Terje Solsvik, “Norway wealth fund could invest $70 bln in private equity,” *Reuters*, November 28, 2023.

At CalSTRS, we are trying to create a carbon tracker to figure out where the broad society and the broad market is on carbon. We want to be ahead of it, but we don't want to be so far ahead that it creates tracking errors and underperformance.

I've said it a million times: being right too early is indistinguishable from being wrong. If I know something's going to happen in the market, but I'm five years too early, that's the same thing as being wrong. It is about timing and size. And that's what makes an investment market really challenging.

Marcos Tarnowski: At many pension funds, there is a tension among the stakeholders between doing what's good for the plan and what's good for the planet. How do you balance these goals?

Christopher Ailman: It is a tension between taking care of your fiduciary duty, but not just today—for the future and future generations as well. We want to make money today and also 30 years from now, because we're so long-term-oriented. We have to consider the impact of our investments, and that requires predicting the future, which is near impossible. It is really hard to make an investment today and say it won't harm the world in the future. Look at all the debate about rare earth minerals in cell phones and batteries.

For us, first and foremost, it still has to be about the returns. But if the world decides to ignore the build-up of carbon in the atmosphere and not change our lifestyle, we're going to destroy the investment environment. If that happens, we can't make money and then we can't meet promises even as early as 15 years from now.

I have told my staff that energy transition is the most significant trend in their career, and they have to pay attention to it and take action to shift how energy is used. If we don't, we're all going to be looking at very low returns because of all the risk and the mitigation of extreme weather events.

Collaborative approach to investing

Elizabeth Skovira: CalSTRS recently announced $1.6 billion in savings due to the collaboration model and a shift to internal management.[4] How should public and private managers interpret this model?

Christopher Ailman: I did a ten-year financial plan for my board, where we looked at the growing cost of asset management, particularly the cost of partnerships at 2 and 20 [percent].[5] We felt it was not sustainable, and we were giving away way too much money and profit potential. Credit goes to a Stanford professor who came and gave us a lecture, where one of the words he used was collaborative. It was kind of an epiphany. We felt it was the right word: broad and covered any kind of structure, whether it's internal management or just partnerships.

A lot of that [model] came from spending time with the Canadian pension plans as they were growing. We are a state entity, so I knew we couldn't be a Canadian plan, but it doesn't mean we can't join them. So, we decided to partner with them. We'll look at any model and structure, whether we launch a product with a general partner [GP], own the GP, and in many cases find ways to participate so that we're just not paying 2 and 20 percent on everything.

[4] "Collaborative Model savings surpass $1.6 billion," CalSTRS, November 2023.
[5] Standard fee structure in private markets, which comprises a management fee (2 percent of assets under management) and a performance fee (20 percent of profits made by a fund over a predefined benchmark); Elvis Picardo, "Two and twenty: Explanation of the hedge fund fee structure," *Investopedia*, March 3, 2021.

‘I’ve said it a million times: being right too early is indistinguishable from being wrong.’

For us, it has been a very successful effort to change our cost structure, focusing not on pinching pennies but on trying to partner with people instead of bidding against one another. Moreover, the creativity of different ideas has been wonderful across every asset class. We’ve created opportunities that have better economics for us longer term. That’s what it’s all about: doing business differently with a long-term eye on the bottom line, and being a good, solid, consistent business partner.

Elizabeth Skovira: What does it mean to be a good partner to your GPs?

Christopher Ailman: It changes for different markets and asset classes. In PE, it’s the speed of a decision. They always say the best decision is yes, but the next best decision is a quick no. I’ve always said I want to be demanding, but I also want to be a fair business partner and somebody you respect.

We cover one million public school teachers who go into a classroom every day to teach future generations. We try to show that we’re committed for the long term—we’re going to be a good partner and not change our personality every six months or couple of years. The tremendous turnover among CIOs is really a detriment to the teams.

Think of any sport, art, or business: if you have a turnover of management that quickly, it’s very hard to get things up and going, because everybody is readjusting every couple of years to some new goalpost and objectives. But if you have a consistent playbook and it attracts talent, your people can really focus on what they need to do. Point them in the right direction, give them the right tools, and then get out of their way. That was my father’s advice to me years ago.

Changing culture and governance to enhance performance

Marcos Tarnowski: At CalSTRS, how do you think about portfolio construction as a real tool to differentiate your returns versus having a steady, North Star type of approach?

Christopher Ailman: Historically, we have always been policy- and big-picture-driven with our asset allocation. The board pays attention to tracking errors. We have a budget: we’re allowed to stay within that and make tilts. Since we’re so long-term-focused, we recognize that it’s very difficult to make tactical shifts and try and bet the farm. And our funding plan is locked in: the [California] legislature already passed a plan to fund us over the next 20 years, so we have to stick to that glide path.

I think our secret sauce at CalSTRS is the culture we’ve built. It was there before I got there in 2000. I just tried to cement it in and make it intentional with the team. We’re not perfect, but we really talk about teamwork, input, inclusion, and getting everybody’s ideas on the table, because that’s going to help us make a better decision.

I’ve looked at a lot of money managers over the last 40 years, and the thing that most often explains the alpha is the culture inside the shop. It’s the people, process, and philosophy. Culture can be a star system or a teamwork structure, but when it changes, the alpha disappears. And if you want an early indicator of underperformance, it is

‘Point them in the right direction, give them the right tools, and then get out of their way. That was my father’s advice to me years ago.’

understanding what the talk is in the office. That’s harder now that everybody’s working remotely.

To me, it’s really hard when you’re interviewing a manager. They’ve given you a flip book, and you’re in their conference room, but that doesn’t tell you anything. You have to get out and walk around on the floor, look at the team, and try to get a sense of what the culture is. I’ve often told my staff that the best thing to do is to sit there for a half an hour, waiting for your next meeting. People go back to their normal behavior after a few minutes. Then you’ll get an idea of the office environment, whether it is a real star system, where everybody just cowers under one person, or actual teamwork.

Elizabeth Skovira: If you could make one change in the US public pension governance landscape, what would it be?

Christopher Ailman: If you look at the governance structure that public pensions use, it was mostly written in the 1970s.

If you look back, you can say that the 1970s model wasn’t bad, because people are salt of the earth and did a darn good job, but governance needs to move into the 21st century. These are funds that cover—and are funded from—huge numbers of people across multiple generations. So there’s a value to making them a trust fund and amortizing the mortality table and the life and putting all the investments together.

I think, sadly, that’s part of what has to do with the turnover in the CIO ranks. You’ve got to have really good governance, and you have to have the right personality to stay in this job. Most of the CIOs work for five or 12 people and they turn over constantly. In most other occupations, you work for one or two people, maybe, and you know who you report to, you know your boss, and you know what it takes to make them happy.

Marcos Tarnowski: As you look back on your long and storied career, are there any key things that you would do either the same or differently if you were at the beginning of your career today? What advice would you give to newcomers in the industry?

Christopher Ailman: My first advice would be to not forget to buy low and sell high. Too many times, we bought high and sold low, and we learned a hard lesson.

My second advice would be to not shy away from learning and trying to grow more. As much as you think things are going to stay the same, Lord knows they're going to change. In the early 2000s, for example, my board had asked me to put together a list of inevitable surprises that we should be thinking about. One of the things I mentioned was a global pandemic. I was thinking something like SARS or Ebola might happen, but we ended up having an even worse global pandemic. And yet, what amazes me the most is that during the pandemic, we also ended up having a great economic environment, particularly for the stock markets.

I think this is a good example of how you just have to be on your toes. You can plan for the future, but you cannot predict the future. And you're going to be humbled. That's my final piece of advice. Stay humble. Just because you say it's so doesn't mean it's right.

Christopher Ailman is the former chief investment officer of CalSTRS, a state public pension fund. **Elizabeth Skovira** is a partner in McKinsey's Boston office, and **Marcos Tarnowski** is a senior partner in the Montréal office.

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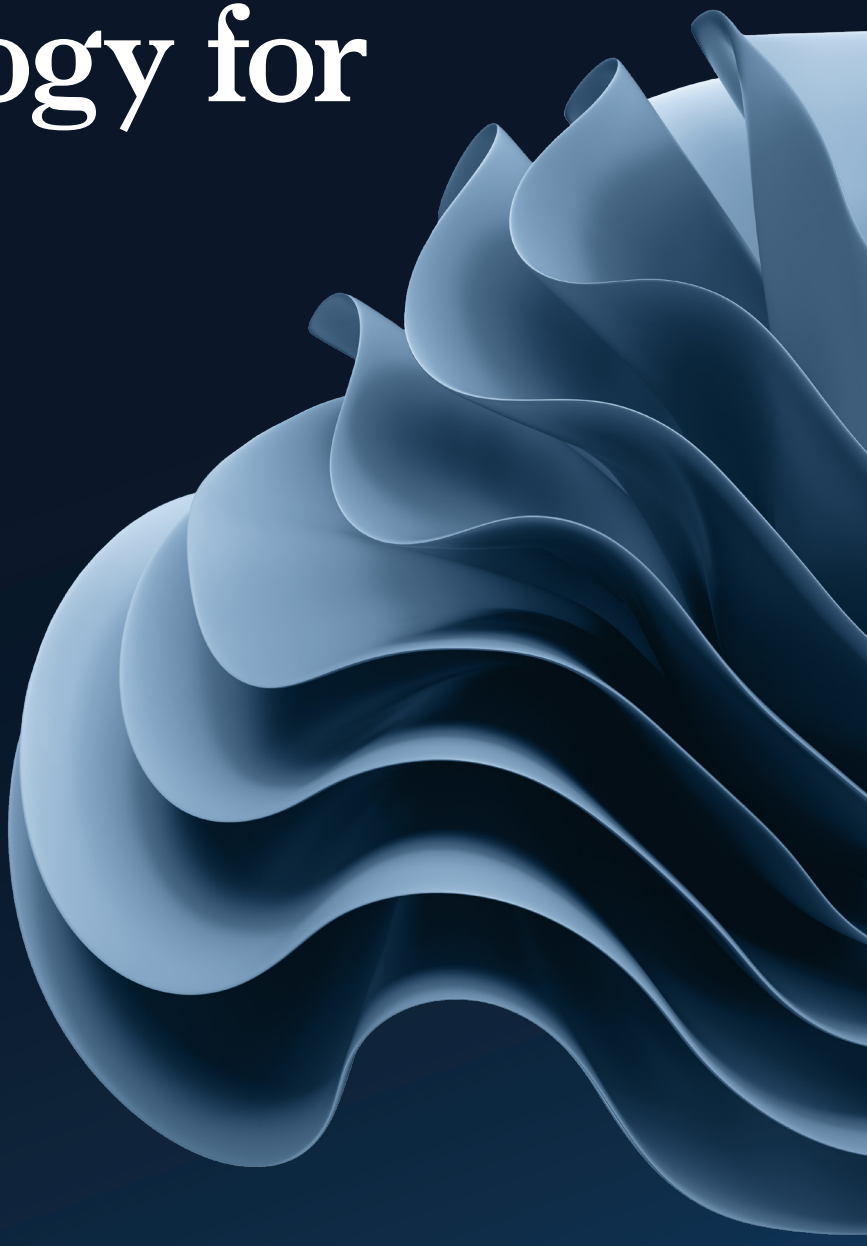
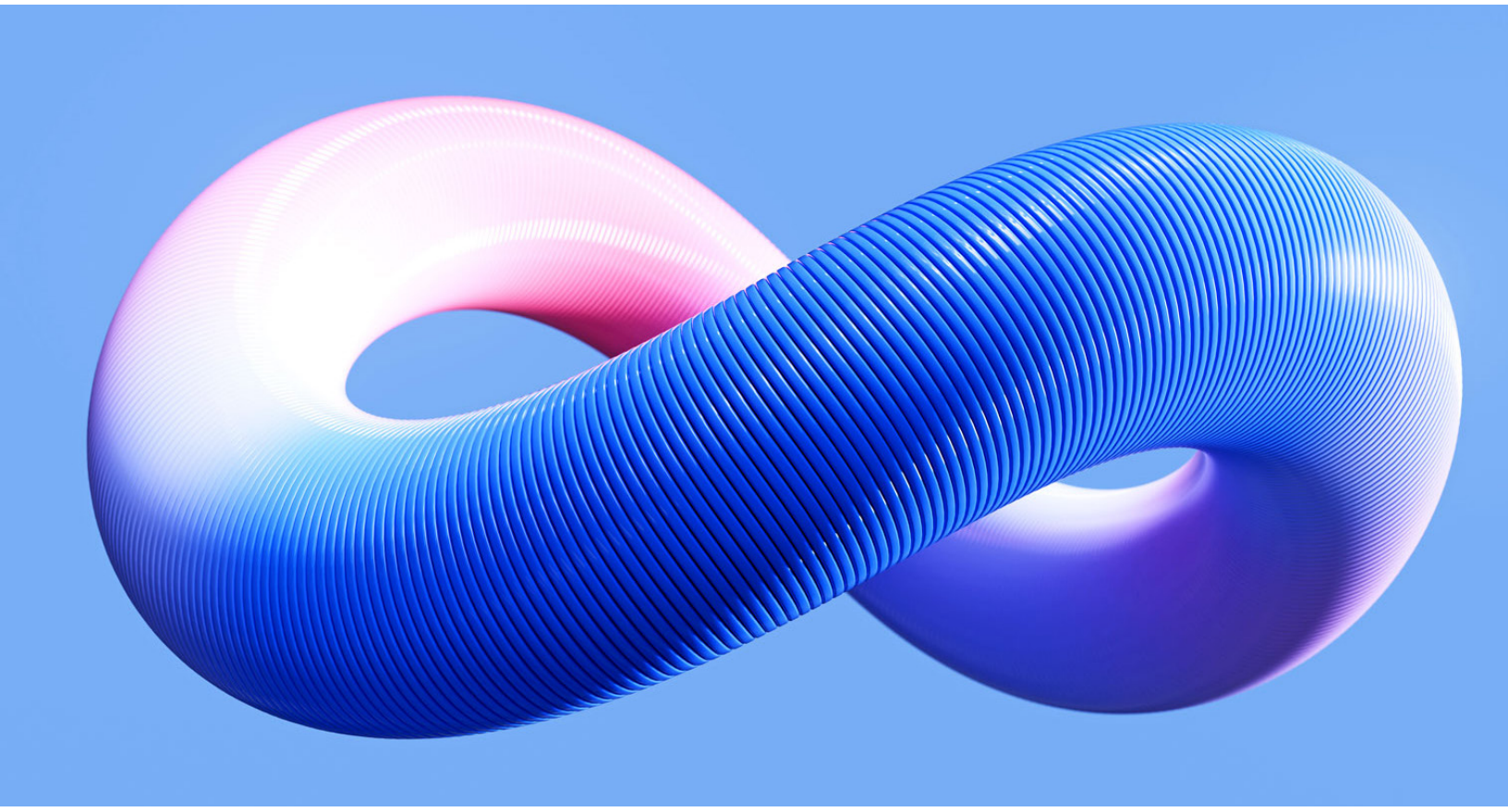
Latest implications of technology for investors



A clear-eyed view of gen AI for the private equity industry

Private equity firms can reach greater heights by integrating generative AI into their businesses, but getting started requires a thoughtful approach.



McKinsey senior partner Ben Ellencweig leads alliances and partnerships for QuantumBlack, AI by McKinsey, and spends much of his time working with private equity (PE) firms and their portfolio companies. Ellencweig spoke to former McKinsey partner Brian Vickery about the hype surrounding generative AI (gen AI) and its implications for private equity stakeholders.

How gen AI can take PE firms to the next level

Brian Vickery: Let's start by clarifying a few definitions. Companies have been using machine learning [ML] and analytical AI for several years now. How does gen AI differ from those technologies?

Ben Ellencweig: Analytical AI and ML algorithms are used to complete analytical tasks—classifying huge amounts of data, predicting the cluster, and evaluating it—faster and better than humans, which makes them great for tasks such as customer segmentation, sentiment analysis, and sales forecasting. Gen AI can take creating content to the next level—for example, new lyrics and music for a Beatles-style song or software code—as if a human was involved. The content can be images, videos, or text. People think about content generation in the context of marketing, but it could be creating a technician manual, assisting in drug discovery, or enhancing efficiencies for a portfolio company.

Brian Vickery: There's an enormous amount of hype about gen AI. What do you characterize as hype versus potential, and where are people actually using gen AI today?

Ben Ellencweig: We see four big use case archetypes today. The first is code generation: there are code and developer productivity tools and copilots to help us write better code, run quality assurance on it, and make sure we're generating enough synthetic data as we create software. The second is content generation, such as for marketing materials—including the holy grail of hyperpersonalized communication—and technical manuals. The third is human engagement, using bots or agents to create a new experience in customer service, sales enablement, or servicing employees in finance and HR functions. And the fourth is the virtual knowledge worker that can summarize and extract insights from large amounts of information, including unstructured data sources. These are still the early days for some uses cases. Others are more advanced, and we're seeing innovation day by day.

Brian Vickery: How are most companies approaching these archetypes? Are they initially trying out one? Is anyone adopting all four?

Ben Ellencweig: Yesterday, I participated in a forum with about 65 PE operating partners. I asked how many have portfolio companies that are adopting gen AI, and about 60 percent put their hands up. Then I asked this subset if their companies are not only experimenting but also in production at scale, and only three hands, or about 5 percent, stayed up. I would say this is typical of what we see.

Interestingly, before gen AI, most companies failed with advanced analytics or AI transformations because it's hard. It requires a lot of change management to win hearts and minds. You have to measure impact. Making investments calls for patience while waiting for the ROI. Data governance is a major concern, and the list goes on. Gen AI adds even more layers of complexity. If 2023 was the year of experimentation with pilots everywhere, 2024 and especially 2025 will be years of scaling and actually moving impact to the bottom line.

The PE industry can learn from other industries on how to leverage gen AI

Brian Vickery: What questions do PE firms have about gen AI, and how are you advising them?

Ben Ellencweig: Three questions come up a lot. First, PE firms want to know what others in their segment are doing—for example, to create efficiencies—and how they compare. Earlier today, I met with a portfolio company in the drug discovery space, and at one point, they asked whether any other companies in their sector were doing what they are doing. The answer was maybe, but that's not the right question. Instead, they should ask how a German automotive OEM or an aerospace developer is thinking about using gen AI and digital twin–simulation tools in R&D and then apply those

lessons to drug discovery. It's important to go beyond the cutting edge in your industry and understand which innovations are transferable across industries.

Then they want to know how to get started. As I said, this is complex and involves not only technology but also a lot of psychology. The portfolio management team has to be on board, and there are decisions about where the budget comes from. Beyond that, we always talk about "two by two": first, find two small use cases and just get going. It could be something straightforward such as an off-the-shelf bot solution using gen AI in the call center. But start as soon as possible, and let people dabble with it. Your sellers, buyers, and customers are smart; they will see what works and adopt it pretty quickly. This creates the right momentum in the short term.

In parallel, think about two strategic workflows for the company—the essence of who you are and what you do. For example, an industrials company was considering developing an R&D copilot because they were charging a premium for their product. But the CEO said, "No, we're charging a premium because we've got great service. When Bill or Joe show up on the factory floor, they know the layout, the throughputs of the machine, and the history of repairs for the past 30 years. That is our value." So instead, they developed a service copilot that helps technicians understand the history, find the right repairs, and order the right parts based on pictures taken with a mobile phone. It might take a year or more to reinvent a strategic workflow with gen AI, but that's the two-pronged approach we recommend.

Finally, people ask how to measure progress so they can assess whether they are doing well or falling behind. It's important to set a baseline and understand the problem you're trying to solve so you can see if an improvement trickles to the bottom line.

A gracious approach to funding gen AI projects can yield meaningful returns

Brian Vickery: How have you noticed the perspectives between portfolio operations partners, portfolio company CEOs, and deal teams differ on gen AI, especially the budgeting for it?

Ben Ellencweig: Although everybody understands gen AI's importance, aligning those three groups is quite challenging. Many times, the company is excited, but they don't get relief from the owners to fund it. Or the PE owners and the operating partner are excited, but the company and investment partners are not.

Keep in mind it really isn't that costly. By my estimates, roughly 1.0 to 1.5 percent of companies' current IT budget would nicely cover the costs to deploy gen AI. That's not including cloud and personnel, but the day-to-day opex [operational expenditure] is not massively more than what companies are currently spending on tech. I encourage owners or portfolio company executives to graciously provide funding because, although it's not a big amount, it can make a huge difference because it helps avoid distorted decision making and can mean a lot for a company's long-term health. It has a much faster ROI than any previous transformational IT project.

How gen AI is influencing dealmaking and due diligence

Brian Vickery: When you are working on diligence on behalf of PE firms, what's the right way to take gen AI into account?

Ben Ellencweig: It reminds me of the early days of cyber. Assessing cyber during due diligence started with a single question: Is there any cyberthreat? Then the checklist became a page in the booklet that comes out of diligence. Now it's a whole chapter.

Today, many people focus on productivity gains. But what about the revenue enhancement opportunities with gen AI? Gen AI could enable self-serve tools, new products, or enhancements to existing products that increase their value. Another angle is much more strategic. Will gen AI cause a tectonic shift in a company's industry or in, say, its pricing? IT services and law firms, among others, charge by the hour, but that model is challenged by gen AI. If BrianCo cannot show productivity gains, the customer might prefer to hire BenCo. Yet if BenCo is still charging by the hour, the customer is losing money despite the efficiency.

It requires rethinking the three lenses of productivity, revenue enhancement, and strategic shifts, which affect not only business models but also pricing. Our diligence on gen AI today is roughly a page, but before long, it will be a chapter.

Practical considerations for getting started with gen AI in PE

Brian Vickery: Many PE companies feel their data is not in good enough shape for gen AI. What do you say to those folks?

Ben Ellencweig: Show me a company that doesn't have massively messy data sets. This is a very common starting point. But when it comes to the data, the beauty is that you can use gen AI to clean up your data to make it usable for other gen AI applications to extract value.

To get started, remember technology is only 20 percent of the work. I envision three prongs. First, get organized and put in place all the enablers. That includes getting the data in order, setting up data governance, and identifying technology partners and talent needs. It also includes considerations about structure. You can set up a center of excellence at the fund level for all the portfolio companies, hire a third party, or tell the portfolio companies to do it for themselves. You also need a champion. I talked to a guy yesterday who said he's spending 80 percent of his time on his gen AI "sidekick" even though he's an operating partner.

Next, think about psychology and change management. Educate your colleagues. Run a "gen AI day" for the CEOs, CIOs [chief information officers], and CTOs [chief technology officers] of your portfolio companies so they can share what they're doing. Send them tutorials, and bring in outside speakers. This space is moving so fast that it's hard for a day-to-day manager to keep up. And that's where the fund can help. Also, educate your own colleagues at the fund level. The operating partners can make sure everyone stays in touch with what's happening with technology. Third, there are portfolio-level applications, which require a road map. Having a plan is important because without it you can't move forward.

Brian Vickery: We're seeing a lot more reporting recently on the risks of gen AI. How do you reconcile where the world is going, and how we do get there responsibly?

Ben Ellencweig: This is new, and we're still exploring the risks and how to mitigate them. Regulated industries such as financial services and healthcare have their own distinct compliance-related risks. There are safety risks in drug discovery, automotive, and aerospace, for example. We're all working to mitigate risks of hallucinations—which is when the model thinks something is real but it absolutely is not—and biases. But we don't talk as much as we should about the carbon footprint of those massive data centers or even how the United States will meet demand for electricity and AI chips for electric vehicles and gen AI.

I heard a great analogy: gen AI is like an intern. You give them a task, they go off, come back all excited, and create something that looks really good. It's structured, thoughtful, and well organized, but it could be totally wrong. We need to look at the outputs of gen AI with a critical eye and apply our human judgment to evaluate whether we trust them. In many cases, the outputs are spot on and can advance our thinking. As long as we keep humans in the loop, we can do a lot of good with gen AI.

Ben Ellencweig is a senior partner in McKinsey's Connecticut office, and **Brian Vickery** is an alumnus of the Boston office.

Leading through noise to find the right signal

March Capital's Wes Nichols talks about innovating on the front lines of technological change.

Serial entrepreneur and investor Wes Nichols spoke with McKinsey innovation leader Erik Roth about the building blocks of innovation that help start-ups get traction and scale. Nichols started MarketShare, the marketing resource allocation software solution; today he is a partner at March Capital, the growth-stage venture capital firm that focuses on enterprise technology companies. This is an edited transcript of their discussion.

Erik Roth, McKinsey: When I met you, you were creating MarketShare. Now you're investing for one of the more successful growth equity funds here in California. Tell us about the journey from founder to investor.

Wes Nichols, March Capital: Even as a little kid, I remember going into stores and seeing things that were being done poorly, and thinking, "Why don't they do it this way? Why don't they improve this?" So I've always had the DNA to try to innovate and improve things. I was fortunate enough to grow up in a household of an entrepreneur. My dad is an architect, and I had a front-row seat to the pros and cons of that. I was also very drawn to data, and applying data and analytics to figuring out problems is the same as driving revenue or growth—you have to have a right number of combinations of things coming together, but you have to have the data to make those decisions right.

Erik Roth: As an investor, what are the things you're looking for in a company that give clues they're thinking about a problem in the right way?

Wes Nichols: What we look for are not only innovative ideas that we think have the ability to be mission-critical but also to create a global platform. We look for founders who've done this before, or have teams that worked well together before. And also for leaders who have had some adversity in life. That pattern, from a founder's standpoint, is really important, because it helps create determination to see their venture through. There are lots of days where you're doubting why you're doing this. You have to find people who can power through that.

Erik Roth: Talk about why you started MarketShare. What was the problem you were trying to solve?

Wes Nichols: I sold my first company to Omnicom Group, and then became a global CEO of one of their businesses, where questions about allocation and measurement started coming up more and more. This was in an industry that had been doing backward-looking, media mix analytics in Excel spreadsheets, where it takes six months to gather the data and then another six months to run models. So you're looking at insights a year later. I saw the opportunity when digital marketing was emerging and CEOs of big companies started asking our team, "If I had an extra dollar, where should I spend it? Should I put it into brand building? Digital marketing? Price discounts?"

You have lots of revenue-generation levers, and it's very hard to understand how those things actually interact when you're measuring on a silo basis. We started talking to academics and found a few who specialized in building resource allocation models, a solution that helps allocate how you spend your resources to drive revenue. The big question that then came up was, How do you create this for marketing and sales dollars?

This is a complex question. The data you need is spread throughout an organization, and it's usually a mess. So we started building models for clients, and it soon became apparent that this needed to be a stand-alone company. Companies needed an equivalent of a GPS system for resource allocation, and none existed in software form.

Erik Roth: Once you have the problem and some people who can solve it, how do you scale it?

Wes Nichols: Part of it is asking, What are we trying to build? I wanted to build the Waze of resource allocation: you type in your destination, and it gives you turn-by-turn instructions, including what your budget should be, where the resources should go, and then, if something pops up along the way, maybe competitive change or interest rates going up, the system redirects.

Erik Roth: How did you identify your first customer?

Wes Nichols: The first client is always the bravest. If you think about the stasis that exists in most companies, the comfort in doing things the way things have always been done, the idea of doing anything where you're sticking your head up a little higher than average is very scary. So finding a handful of companies that would embrace something like this was job number one. We found a few: a large grocer, a large software company, an automotive company out of the UK.

Erik Roth: What is it like to convert that first sale?

Wes Nichols: It's a lot of pressure. I remember my partner and I putting together our first proposal and figuring out what to charge. We said, "How about $379,000?" And they signed the agreement and sent it right back. I felt like we knew what the cost would be, we knew the margins we needed. Really we were using the money from clients as venture capital. My partner and I had co-funded the business for the first few years, which is what allowed us to keep as much equity as we did—we were able to take a lot of the risk out of it early on. We worked very lean, but we delivered. We knew how to build the software. It was rudimentary, but the client understood that. We weren't overpromising, and they were willing to take the risk on the journey because they needed this.

We had one client, a chief marketing officer at a large bank that had a board populated by hedge fund people. She'd never been able to have a successful meeting with the board because she couldn't talk their language, until she was using MarketShare's tools. Then she was able to talk about return on invested capital and about all these financial nuances applied to marketing that blew their mind. They had no idea they could actually equate that soft and fuzzy stuff of marketing into P&L language.

The fact that our product helped our clients' careers was important. If they were willing to take the chance on us, we would move heaven and earth to make this work for them and overdeliver.

Another piece of our success was taking a land-and-expand approach—global companies don't want to deal with 50 different solution providers, so once you get into one global company you then expand to Canada, or the UK, and that let us go after even larger clients.

Erik Roth: Once you scaled MarketShare, what was the process of realizing you needed to exit?

Wes Nichols: We decided that we could probably start to plan an IPO—we had enough predictable revenue, the company was software based, it was growing very fast, and the margins were good. But at the same time, some of our partners, large software companies, started to approach us. I've been on a couple of public boards, and I did not want to run a public company. So we started looking at going down the path with these software companies. But then we realized that MarketShare's DNA is about neutrality and objectivity, and we felt that if we became part of another company that could benefit from the outcomes of the models, we would lose that neutrality.

We also knew that cookies—the digital currency that the industry uses to measure customer behavior—were going to disappear, and that the way these analytics work would need to adapt. Through one of our investors, Neustar, the data analytics company, came up. It was a medium-size public company that started as a Lockheed Martin spin-off, and they had incredible identity-level data that wasn't reliant on cookies. They were looking for a solution that would be an application that would sit on top of their data, and we were looking for data that could help fuel our software that was not reliant on cookies.

Ultimately Golden Gate [Capital] took the company private. I went onto the board, and then a new CEO came in and did a great job of straightening things up and getting rid of some "stray dog" assets. About a year ago, the MarketShare and Neustar identity data piece was acquired by TransUnion.

Most of the team at the time of our exit is still there, which is important. We wanted to find a home that would allow the team to continue to see growth and

upside. The company is at least three times what it was at our exit, and it's really exciting to see it have a new home.

Erik Roth: Today you're an investor, advising lots of companies. How do you know whether they have found a valuable problem to solve?

Wes Nichols: Part of it has to do with the founder. You can be exposed to lots of different signals, but if you're not listening and absorbing and seeing the patterns emerge, and then applying a level of creativity to figuring out if there's a solution there or not, then you're missing the boat.

Part of what we have to do from an investor standpoint is assess how they [the founders] frame the space they're in. How are they thinking about the market need? Are they solving a big enough problem, or is this just a point solution that should be part of a larger company?

Erik Roth: How do you advise founders and companies to think about the journey to get to the second year and the point where they might land in the sweet spot of an investor?

Wes Nichols: What I learned with MarketShare was that there would be several years of growth and lift, and then you hit turbulence. You get through that, and it's clear for a bit, and then you hit more turbulence. Looking back, I see that the turbulence indicated we were breaking through to the next level of scale. It was painful. We had to adapt each time.

One of my favorite quotes is from [Arthur] Schopenhauer: "All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. And third, it is accepted as self-evident." That resonates with me because we had so much trouble getting people to believe that what MarketShare was building was actually possible.

If you think about innovation and entrepreneurship, entwined with each other like that, it's a pretty insane idea. You're creating something no one's ever seen before, that no one thinks they need, no one has budget for, and everyone's scared to try, at least in big companies. At that point, failure's not an option.

> 'You can be exposed to lots of different signals, but if you're not listening and not absorbing and seeing the patterns emerge, and then applying a level of creativity to figuring out if there's a solution there or not, then you're missing the boat.'
>
> –Wes Nichols, partner, March Capital

Erik Roth: What else are you looking for?

Wes Nichols: Obviously, focus. Relentless focus. I'd say maybe a psychotic level of focus is important. Otherwise it doesn't happen. If you're trying to launch a business and you also want a lifestyle company, then it's DOA. It's just not going to work. It is an all-or-nothing exercise.

Part of it is building relationships. It's not like an ATM where these companies walk up and all of a sudden need capital. We are building relationships a year or two in advance of when they might need capital.

You have to be really good at judging people, and doing background checks, and looking at their team, and being close to it. One of the things I learned from my public board work that I think has made me a better investor board member is this notion of NEFO: nose in, fingers out. If you're a director you have to have your nose in, knowing what's going on in these companies and their teams and what they're facing. But you're not trying to drive it. I'm not reaching over and grabbing the wheel. I'm just trying to understand what the issues are and to be a resource when they need some help.

Erik Roth: A founder needs to be able to say, "Here are the next three steps," and then know when to say, "And when you're on step two, it's time to add the next three steps and move the goalpost forward."

Wes Nichols: A mentor of mine used to say, "Change the people or change the people." And that's hard sometimes, particularly because they're the people there from the beginning, and they're your coworkers and friends. But to get to that next level, sometimes difficult decisions have to be made. I'll give you an example from the MarketShare days. We had been focused on a particular analytic model and complex solution when a new area came up that I felt we needed to be in. I kept bringing it up to our product group, and they kept saying we should stay nose to the grindstone with the ongoing complex product.

So I went to two of our clients and talked to them about this idea, and they both said, "That's exactly what we need," and we signed a $1.5 million contract with them as alpha clients. I brought it back to the product team and said, "We now have clients demanding this new product." We built it, and now it's 85 percent to 90 percent of the company's revenue. Sometimes you have to drive that transformation in a forceful way. The product team had what I call their low-beam headlights on, and sometimes you need to toggle between the high beams and the low beams to see what's going on up the road.

Erik Roth: How do you handle that as an investor?

Wes Nichols: That's definitely an area where we try to be the go-to resource when they need to think through, "Is this time to get a new chief revenue officer?" or, "My cofounder was great at the beginning, but this company's bigger than they thought it could be and now they're not pulling their weight." These require difficult conversations. It's much rarer to say, "That founder needs to step aside." When you look at private companies or start-ups that have gone public, 70 percent of them, when they go public, are led by the founder. Sometimes venture capital firms like to bring in a hired gun, but I don't agree with that, unless it's really necessary, or the founder decides they may not be the right leader for the future. There were many days I was wondering whether I needed to do that. We'd gotten big—we had 800 people around the world—and I was traveling nonstop. You start to wonder, "OK, maybe someone else could scale this better."

Erik Roth: What did you do in those moments?

Wes Nichols: It helped that I had mentors. Also, talking to clients, or prospective clients, was an incredible source of human intelligence. Pulling that data together and using it for pattern recognition to identify where we should be headed as a business was really important.

Erik Roth: Generative AI [gen AI] is one of your focus areas, and this is also an area where filtering through noise is critical. Oftentimes a new technology ends up chasing problems for a while rather than solving them. Are you seeing that with gen AI, or are you seeing a shift where the problems are starting to shape the technology?

Wes Nichols: The way I look at it is that you need to be solving a big problem. If your solution happens to be powered by AI, great. If it happens to be powered by generative AI, wonderful. That's a whole other scale of opportunity. But the core issue needs to be there—is this solving a business problem that is a critical need? And is it something that can ultimately be scaled to a global platform?

Erik Roth: Looking at generative AI broadly, what's your sense of what's different and where the opportunities are?

Wes Nichols: Right now we have a confluence of data, compute power, and new mathematical methods that make this all possible. We couldn't have done this a few years ago. As Marc Andreessen said, software's eating the world. And now we're seeing AI eating software. If software 1.0 was the interface with the computer, and software 2.0 was mobile-first and the cloud, software 3.0 is where we're at right now. With AI, especially machine learning and gen AI, we're seeing a new wave take over. I think this is as important as the microchip or the internet. And we're just at the beginning.

Erik Roth: Where do you think this goes, and what's going to drive it? There is a lot of hype and tons of capital being poured into the gen AI race, and start-ups all over the place in this area.

Wes Nichols: I equate it to the early stages of MarketShare, where we would build POCs [proofs of concept]. Clients could test it out and we could see who's brave enough to deploy it. Then, once it proved itself, it became essential, and then it became something that people would realize was career-shortening if they didn't use it. I feel like we're going to start to see that happen as we see software 3.0 really focusing on a couple of areas. Cost reduction is an obvious one, as is speed to execution. The way it's being used to help with coding and reduce complexity is powerful. There are lots of different applications for it that are very real-world, which we will probably see move from POC into institutionalization soon.

Erik Roth: Wes, thank you for taking the time to talk to us today.

Wes Nichols: Thank you, it was really fun.

Wes Nichols is a partner at March Capital. **Erik Roth** is a senior partner in McKinsey's Stamford office.

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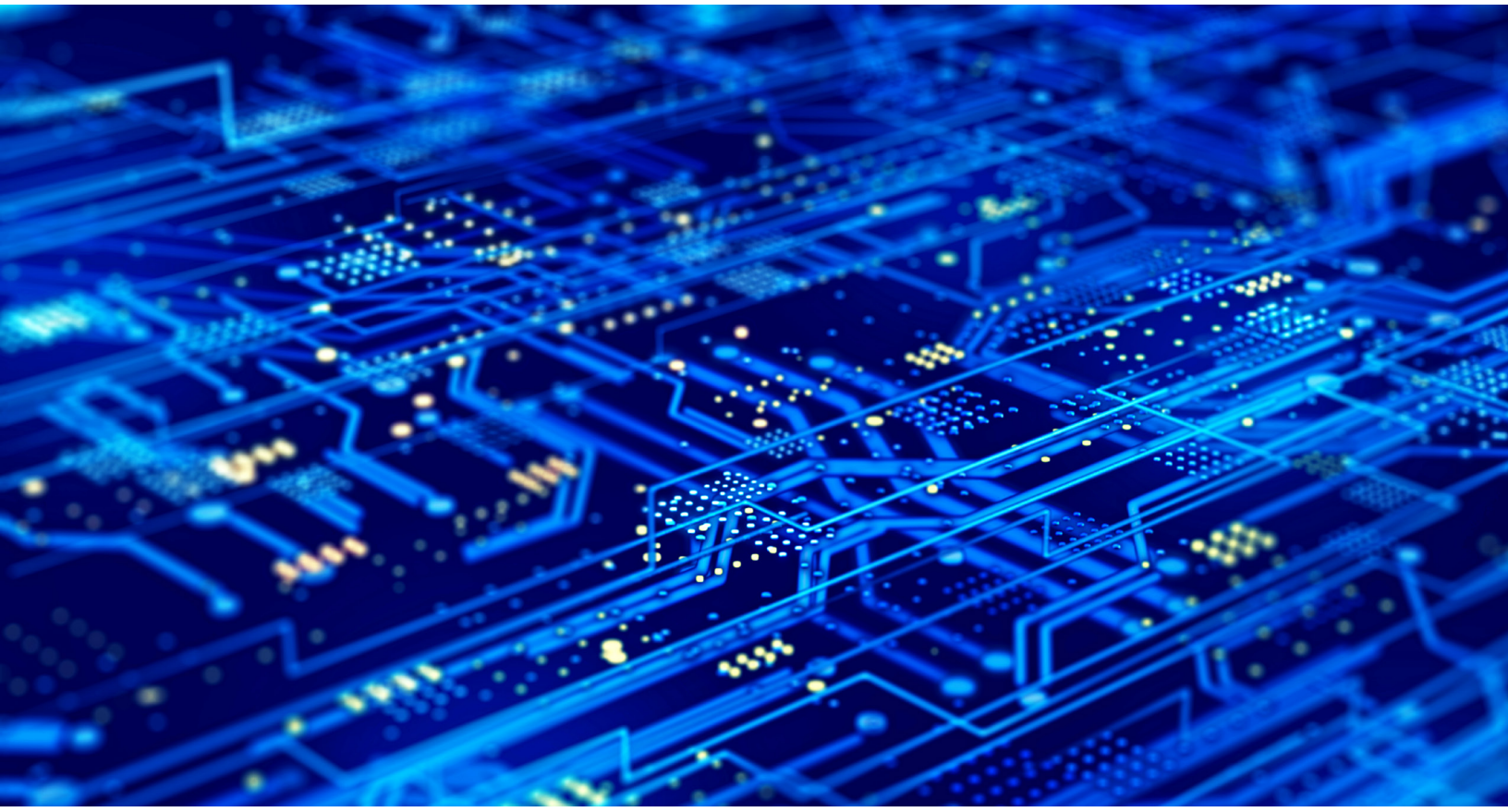
How data centers and the energy sector can sate AI's hunger for power

The growth of data centers and the adoption of AI rely on the availability of electric power. Opportunities for investors in power infrastructure and adjacent sectors are quickly emerging.

by Alastair Green, Humayun Tai, Jesse Noffsinger, and Pankaj Sachdeva with Arjita Bhan and Raman Sharma



Surging adoption of digitalization and AI technologies has amplified the demand for data centers across the United States. To keep pace with the current rate of adoption, the power needs of data centers are expected to grow to about three times higher than current capacity by the end of the decade, going from between 3 and 4 percent of total US power demand today to between 11 and 12 percent in 2030.[1] Skyrocketing compute and data demands are being further accelerated by gains in computing capabilities alongside reductions in chip efficiency relative to power consumption. For instance, the amount of time central processing units need to double their performance efficiency has increased from every two years to nearly every three years. And providing the more than 50 gigawatts (GW) of additional data center capacity needed in the United States by the end of the decade would require an investment of more than $500 billion in data center infrastructure alone.[2]

The power sector is rapidly becoming a protagonist in the AI story. Access to power has become a critical factor in driving new data center builds. As the power ecosystem grapples with meeting data centers' voracious need for power, it faces substantial constraints, including limitations on reliable power sources, sustainability of power, upstream infrastructure for power access, power equipment within data centers, and electrical trade workers to build out facilities and infrastructure. Currently, for example, the lead time to power new data centers in large markets such as Northern Virginia can be more than three years. And, in some cases, lead times for electrical equipment are two years or more.

Without ample investments in data centers and power infrastructure, the potential of AI will not be fully realized. This article addresses this rapidly evolving space: the prospective growth of AI and demand for data centers, the challenges to scaling data centers, and how investors and incumbents could realize significant gains while helping fulfill AI's potential.

The scope of escalating demand for data centers

According to McKinsey analysis, the United States is expected to be the fastest-growing market for data centers, growing from 25 GW of demand in 2024 to more than 80 GW of demand in 2030. This growth is fueled by the continued increase in data, compute and connectivity from digitalization, and cloud migration, as well as the scaling of new technologies—the most important of which is AI. McKinsey research estimates that generative AI (gen AI) could help create between $2.6 trillion and $4.4 trillion in economic value throughout the global economy.[3] But achieving just a quarter of this potential by the end of the decade would require between 50 and 60 GW of additional data center infrastructure in the United States alone.

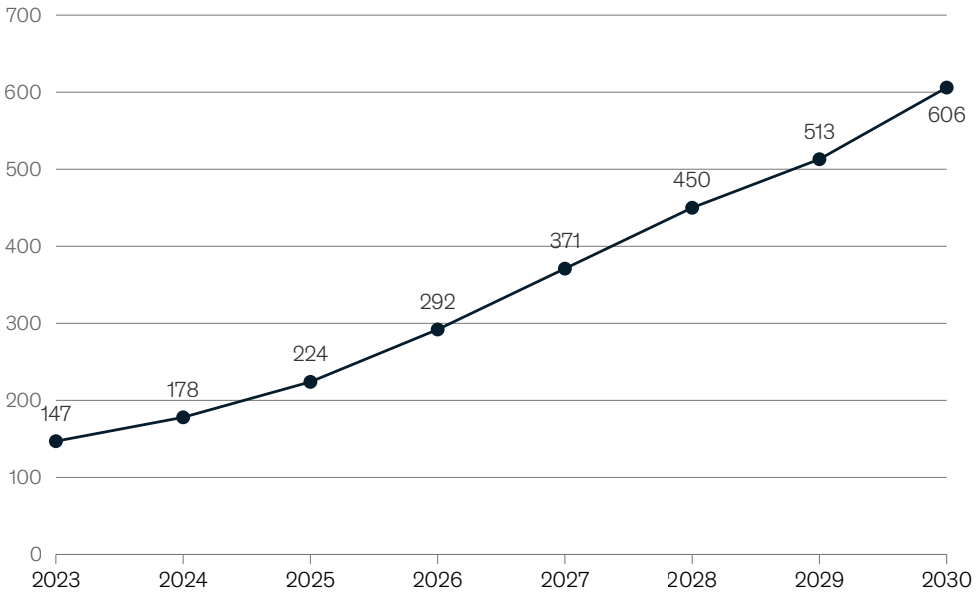
Meeting this demand will require considerably more electricity than is currently produced in the United States. This spike in electricity needs is unprecedented in the United States, where power demand in the aggregate has barely grown since 2007.[4] Data center load may make up between 30 and 40 percent of all net new demand added until 2030, with demand growth arising from domestic manufacturing, electric vehicles, and electrolyzers (see sidebar "What makes data center load unique?"). Between 2024 and 2030, electricity demand for data centers in the United States is expected to increase by about 400 terawatt-hours at a CAGR of about 23 percent (Exhibit 1).

[1] This calculation excludes power consumption for cryptocurrency.
[2] This total excludes investments required for IT equipment inside data centers and upstream investments in transmission and distribution infrastructure.
[3] *The economic potential of generative AI: The next productivity frontier*, McKinsey, June 14, 2023.
[4] "Electricity data browser: Retail sales of electricity United States, annual," US Energy Information Administration, 2023.

Exhibit 1

Demand for power for data centers is expected to rise significantly in the United States.

Terawatt-hours (TWh) of electricity demand, medium scenario



	2023	2024	2025	2026	2027	2028	2029	2030
Share of total US power demand, %	3.7	4.3	5.2	6.5	8.0	9.3	10.3	11.7

Source: *Global Energy Perspective 2023*, McKinsey, October 18, 2023; McKinsey analysis

McKinsey & Company

As demand for data centers climbs, the implications for companies in the power value chain become more apparent.

Constraints across the power value chain may hinder progress

Companies across the power value chain are contending with constraints and shortages, bottlenecking progress. The industry is approaching its physical limits on node sizes and transistor densities, and long lead times have also hindered progress. The time required to get new power connections for data center sites in major data center hubs such as Northern Virginia; Santa Clara, California; and Phoenix has been increasing. Locations outside of the United States, such as Amsterdam, Dublin, and Singapore, have placed moratoriums on many new data center builds in recent years primarily because they lack the power infrastructure to support them.

At the same time, the demand from new AI loads has contributed to a shortage of compute availability. Vacancy rates in large tier-one data center markets are at historic lows, hampering interconnection and grid access, especially in highly penetrated markets in which data center load already represents a substantial portion of the overall demand. In Northern Virginia, for example,

What makes data center load unique?

Depending on the workload, data centers can draw power around the clock, with some intraday variation, much like other industrial centers. However, data centers present a unique profile that differentiates them for utility companies and investors.

First, most data centers are sited with backup energy storage systems to ensure high uptime requirements are met. This backup can be dispatched to offset a data center's load when grid conditions become tight, thus creating a load that is, in effect, highly responsive.

Second, data center owners typically have a higher willingness than most other power customers to pay for power. Electricity operating expenditures make up about 20 percent of the total cost base for data center business models, which have proved to be highly profitable for large companies. Therefore, higher power rates do not disrupt the business model. In comparison, for other electricity sources, such as green-hydrogen production, the final product cost is highly dependent on electricity prices, and the expected margins are much thinner.

Third, the demand outlook for data centers and owners' willingness to pay are outliers among uses of electricity. For most uses, power is converted to a physical final product (such as an LED light bulb) and energy efficiency is measured as a percentage (for example, an LED light bulb uses 90 percent less energy than an incandescent one). Computing power is measured by order of magnitude rather than percentage, and the output of power consumption for data centers is information rather than a physical good. Breakthroughs that allow access to low-cost, highly efficient compute do not necessarily lower the demand for electricity. Rather, such breakthroughs may increase the complexity of models that can be run, and they may even enable more use cases that lead to more power demand. In short, the power sector's conventional operational parameters may warrant some reconsideration before they are applied to data centers.

vacancy rates were less than 1 percent in 2023.[5] McKinsey research shows that time to power is the biggest consideration for data center operators when building new sites. Adding to investor tension, as access to grids has declined, timelines for investing in and further building out grids for regulated utilities have become longer than the development cycle of data centers.

Notably, power unavailability in most markets is driven by limitations in interconnecting to the transmission grid, rather than an inability to generate the power. However, latent capacity in the generation fleet is largely held by fossil-fueled plants operating below their maximum levels. While hyperscalers and utilities work to build out the renewable fleet to support sustainability commitments, there is a continuing need to supply not only new load from data centers but also the growing load from electrification (in transport and industry, for example) as well as backfill for aging thermal plants that will eventually retire. As a result, sustainability commitments are, in some instances, taking a back seat to maintaining operations.

In locations with access to power on the bulk transmission grid, there are further constraints on power equipment, such as transformers, on-site backup generators, and power distribution units (PDUs), with historically high lead times of nearly two years in some cases (Exhibit 2).

The strained labor force is an additional inhibitor, particularly the emerging shortage of electrical trade workers essential to executing these projects. McKinsey estimates anticipate a potential shortage of up to 400,000 trade workers in the United States based on projected data center build-out and comparable assets requiring similar skills, such as semiconductor fabrication and battery gigafactories.[6]

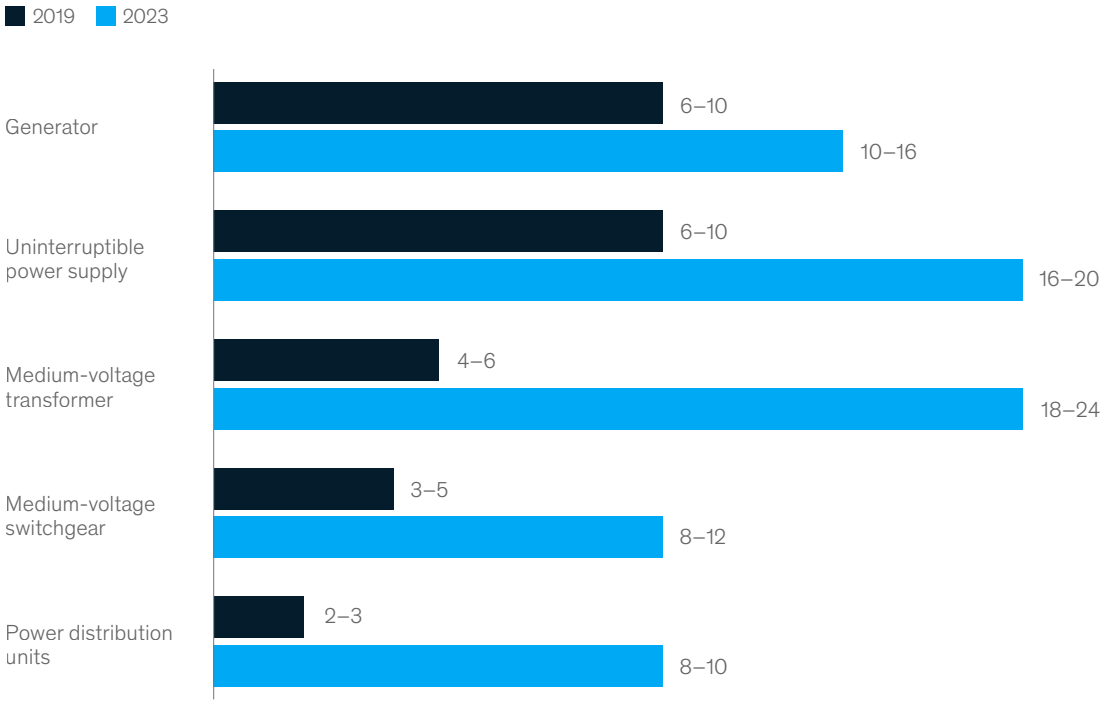
Additionally, the industry faces the daunting challenge of decarbonizing its footprint to achieve

[5] "Vacancy rate in selected data center markets in the United States in 2nd half 2023," Statista, May 21, 2024.
[6] "Generative AI and the future of work in America," McKinsey Global Institute, July 26, 2023.

Exhibit 2

Accelerated demand and supply chain constraints have increased lead times for equipment, resulting in project delays.

Lead time of major data center critical equipment, months



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the goal of 24/7 carbon-free energy usage by 2030. While the carbon emission intensity for power grids is set to drop in the next ten years,[7] generation from natural gas nationally is expected to increase (Exhibit 3). At the same time, most grid decarbonization timelines (if they exist) far exceed the targets set by major hyperscalers.

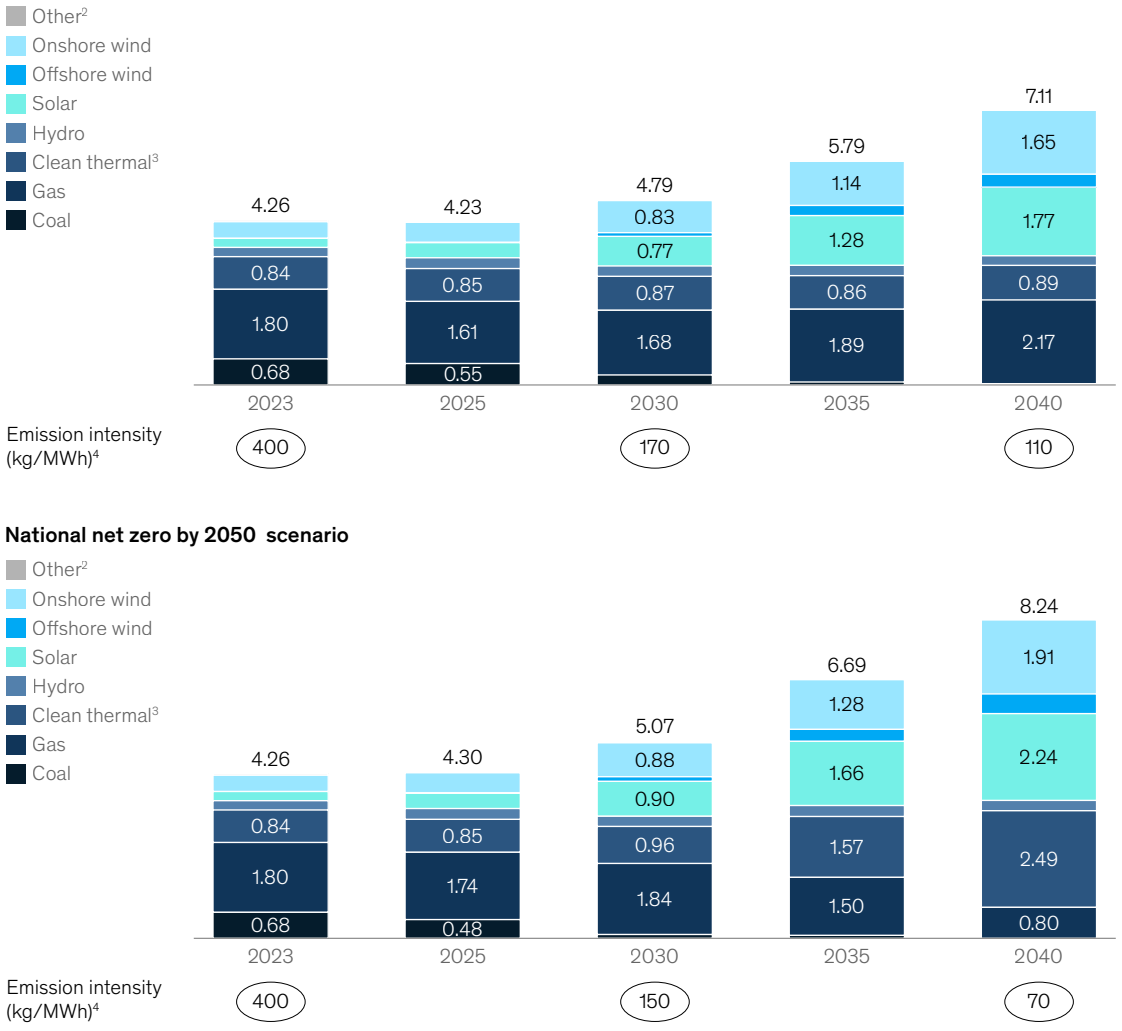
As states, local jurisdictions, and power companies set and work toward their sustainability goals, major corporate customers will also have to demonstrate that they are achieving their self-designed targets. Many public commitments exist, but there is no accepted standard for achieving clean power across the industry. And because grids are synchronized across large geographies, tracking local and time-matched generation and consumption across the shared system becomes a complex accounting activity. As a result, these goals are difficult to measure and often difficult to achieve. Companies across the sector have used many different instruments and approaches to manage their carbon accounting, including unbundled renewable-energy certificates, power purchasing agreements (PPAs), time-matched renewable-energy certifications, carbon matching, offsets, and accreditation activities. Low-carbon power will become an even more important area of investment, but for now, many stakeholders are left to define their own motivations, ambitions, and directions for the future.

[7] "Emissions of carbon dioxide in the electric power sector," Congressional Budget Office, December 13, 2022.

Exhibit 3

The intensity of carbon emissions from grid power is set to drop rapidly in the next ten years but is still far from hyperscale's clean-power target.

US power generation[1] mix by technology, petawatt-hours



[1]Net generation. Includes grid losses but excludes power stations' own consumption.
[2]"Other" includes geothermal, marine, and oil.
[3]Includes nuclear, hydrogen, fossil with carbon capture and storage, and biofuels.
[4]Kilograms per MWh; total emission over total generation.
Source: McKinsey analysis

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Untapped opportunities for investors and incumbents in data center growth

For the data center ecosystem, the tremendous capital deployment and close linkage with the power sector present a significant opportunity.

Across the power value chain, investors can participate in and enable solutions to meet the demand for data centers and accelerate growth. Current progress and limitations alike illuminate three clear areas in which investors may be able

to make the most impact: power access and sources, power equipment, and trades and technicians.

Power access and sources

Investors and incumbents have ample opportunity to be involved in creating new solutions for power access and sources. Four areas have the most potential:

Transmission and distribution investments. Because of the rising criticality of power availability in scaling data centers, more utility companies have realized the importance of and potential in data centers—21 utility providers mentioned data centers in their fourth quarter 2023 earnings calls compared with just three providers in 2021. As a result, investors can funnel investments into utility companies to build out transmission and distribution (T&D) infrastructure in key markets. The demand for data centers and power shows no sign of slowing, so T&D markets should grow accordingly. Advances in gen AI will create even more data, increasing the need for data storage centers to avoid issues that come with managing large quantities of data. Investments in T&D infrastructure will allow for better compute and storage systems.

Secondary markets with access to reliable, cheap power. A natural tension exists between the timelines of data center builds (which can reach 18 to 24 months) and those of power infrastructure development—gas and renewables projects typically stretch three to five years, and transmission development can regularly take seven to ten years. This tension offers opportunities to bridge the timing gap creatively. Many hyperscalers are building out capacity in new and atypical locations outside the core data center markets because these areas offer cheaper, available power and have the potential for carbon-free infrastructure. Iowa, Wyoming, Indiana, and Ohio, for example, each houses, or has received investment from, at least two of the top four hyperscalers. Much of data center growth—about 70 percent—is expected to be fulfilled directly or indirectly (via cloud services, for instance) by hyperscalers by 2030, so several of these emerging locations are self-built by hyperscalers or through built-to-suit co-location providers that are helping hyperscalers accelerate time to market.

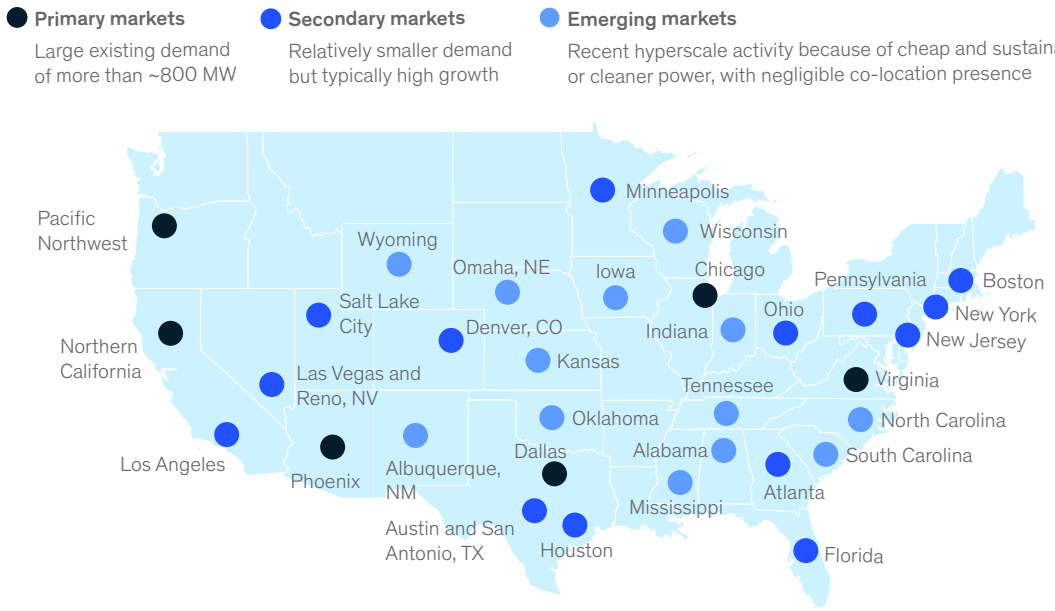
Investors can seek opportunities to fuel growth in these burgeoning markets by investing in data center developers at the company or site level. They can also invest across the value chain by, for example, accelerating the build-out of fiber or power infrastructure in these secondary locations. With growing use cases in training large models, latency across the fiber network becomes somewhat less important, making expansion to additional geographies even more attractive. Data centers in these locations will still need significant data throughput and may be less flexible in the services they provide in the future, but speed to market and attractive economics will, in many cases, outweigh the more specialized nature of the sites. The opportunity for large-scale power projects increases in markets that are scaling with demand for new data centers because it will likely become easier to find contracted offtake, which enables most projects (Exhibit 4).

Across the power value chain, investors can participate in and enable solutions to meet the demand for data centers and accelerate growth.

Exhibit 4

As power transmission becomes constrained in primary markets, leading players are moving to secondary and emerging markets.

Three tiers of US energy markets



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Behind-the-meter solutions. Investors can seek to support behind-the-meter solutions to provide power in areas where utilities providers cannot keep up with pace or reliability requirements as local supply availability or transmission constraints worsen. For example, investors could seek opportunities to build power that can be fully islanded outside the grid, retrofit existing sites or facilities to densify and bring additional capacity, or provide supplemental power to complement the grid (see sidebar "The opportunity for nuclear in data center build-out"). The sites available for these opportunities are limited, but creating more competition and urgency among investors to act sooner than later can help secure the talent, connectivity, and regulatory requirements necessary to run the sites.

Sustainability ambitions driven by renewable-energy providers. With hundreds of terawatt-hours of additional energy demand expected in the coming years, there will be a commensurate demand for clean power for hyperscalers and other large players that have put forth leading climate commitments. This demand should arrive incrementally to state- and utility-level targets, in addition to the numerous corporate commitments outside the data center space. As a result, the desire for additional renewable projects is expected to continue and may help sustain the high PPA rates seen recently.[8] While many technologies—offshore wind, fission, fusion, geothermal, gas carbon capture and storage, and clean fuels, for example—may be able to supply this energy in the medium to long term, the bulk of new clean generation is

[8] "LevelTen's PPA price index," LevelTen Energy, accessed August 26, 2024.

The opportunity for nuclear in data center build-out

In recent decades, new nuclear builds have faced difficulties in the United States and other developed markets. Delays and cost overruns have resulted in poor economics for ratepayers, while costs of other forms of power generation have declined. But with the potentially tremendous growth of compute demand in the coming decades, interest in nuclear power could be renewed. Nuclear power offers several advantages for both the power and compute sectors:

- The supply profile of nuclear plants is consistent and reliable, which would work well with the average data center demand.
- The scale of a nuclear power plant is on par with that of a data center campus based on cost per megawatt of IT load.
- Carbon emissions from nuclear power are low, which aligns with the stated ambitions of most data center operators, so the willingness to pay could be above going grid rates.
- Hyperscalers have the balance sheets and timelines that could afford them a higher risk appetite for investing in nuclear if these investments could create a differentiated advantage.

Nuclear power is a promising solution in several respects, but it comes with its own potential hindrances and challenges to using it for scaling data center infrastructure:

- Nuclear power is a medium-term solution. The timeline to scale nuclear so it can achieve rapid, repeated deployment is nearly a decade, while constraints on data center power are appearing today.
- The early economics of nuclear are challenging compared with other energy options, and implementing various technologies to try to reduce its costs may or may not work.
- Many markets are still wary of introducing nuclear power plants to their locale, which would need to be considered and addressed.

For nuclear to play a role in the generative AI revolution, investment in the sector to scale would need to be significant, but the payoff could be worthwhile, especially as load continues to grow. Demand could increase by 75 percent by 2040, reaching 6,908 terawatt-hours.

expected to come from solar and onshore wind. Investment in this space has a long track record, but this track record does include some mixed returns in the past. However, emerging opportunities in the domestic supply chain, project sponsorship, and increasing operations and maintenance needs are arising in a different environment and may present new risk profiles and attractive returns.

Power equipment

Creating new power grids naturally relies on equipment supply, which offers opportunities to invest in new or emerging technologies. Shortages of critical equipment have allowed for growth among smaller companies focused on creating generators and among hyperscale-focused providers creating PDUs.[9] Investors can seek out the smaller companies creating this critical equipment to help them scale.

What's more, rapidly increasing rack power densities (going upward of 50 to 100 kilowatts per rack) are leading to higher power ratings for equipment across transformers, switchgear, and PDUs, necessitating changes and innovation in product lines and creating opportunity for new entrants. In the same vein, specializing in modularization and the prefabrication technologies of, for instance, mechanical, engineering, and plumbing packages could help hyperscalers build new data centers faster.

Trades and technicians

Given the pace of growth in the data center and associated power infrastructure markets, the gap in the supply of trained talent for electrical and mechanical installation work is widening rapidly. Large specialist contractors, historically relied upon for such projects, are increasingly

[9] For more information on investing in the rising data center economy, see "Investing in the rising data center economy," McKinsey, January 17, 2023.

partnering with regional providers to augment their talent supply. And because more data centers are being built in locations with limited availability of talent experienced in data center infrastructure, contractors are moving talent to installation locations.

This growth in demand can provide a few areas of opportunity for companies in this space and investors looking to increase exposure. First, there is potential to consolidate and scale multiple subscale contractors in regions witnessing high growth in demand. These companies typically lack the scale, capital, and relationships to independently execute large projects, but they may have a secure supply of available talent. Second, scaled companies can invest in increasing their share of off-site manufacturing and assembly, reducing the need for on-site talent and accelerating project execution, likely at a lower cost that could enable margin expansion. Last, reimagining talent sourcing and training is imperative to address shortages, particularly for severely constrained roles such as technical supervisors. The availability of a reliable, qualified labor force will likely be a key differentiator for players in this space.

Gen AI has heightened the need to accelerate the pace and scale of power more than any other technology in the past two decades. The growth of data centers has quickly exposed gaps in both power and data center infrastructure where investment is needed to ensure reliability and affordability across the entire system. At the same time, additional power will be needed to meet clean-power objectives. Amid these circumstances are numerous opportunities to invest in the next generation of power supply and data storage, an area in which owners have a higher willingness to pay. Investors and incumbents that can carve out niches in this power-hungry space can fuel the growth of gen AI and position themselves favorably in the new generation of power technology.

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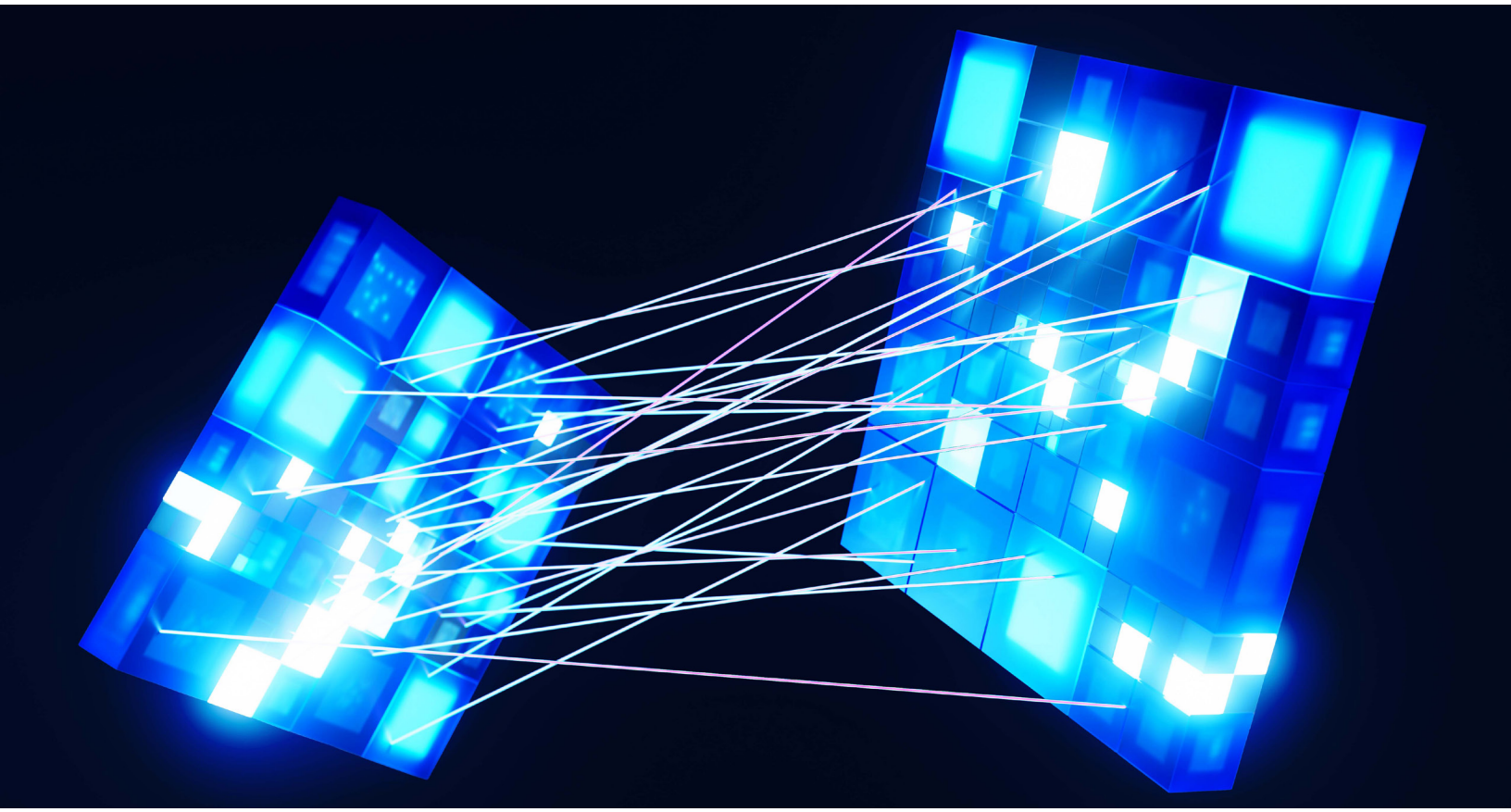
The authors wish to thank Chhavi Adtani, Kelsie Johnson, Nicholas Shaw, Patrick Chen, Rishi Gupta, and Satyam Taneja for their contributions to this article.

Gen AI: Opportunities in M&A

Generative AI is already making its way into the day-to-day world of M&A, and more use cases are emerging. How should companies approach the opportunity?

by Ben Ellencweig, Mieke Van Oostende, and Rui Silva
with Julia Berbel



Generative AI (gen AI) is making its mark across a gamut of industries and functions. Yet as companies seek to capture the immense economic potential from gen AI and traditional AI, they're finding that it will take time to identify and prioritize the most impactful and economically sound use cases, understand what is and isn't—yet—achievable, and train employees for a broad range of applications and initiatives.

M&A is no exception. There are significant opportunities for gen AI across the end-to-end M&A process, from defining an M&A strategy to conducting due diligence to executing integrations or separations. Delivering successful transactions and building an effective M&A program is a resource-intensive process with numerous pain points, and it's clear that new technologies can help. In fact, gen AI solutions are already being successfully applied.

The goal of this article is not to reel off big numbers; suffice to say, the potential is enormous. As dealmakers prepare for what's to come, we want to share our real-time perspective. We'll explore some potential M&A use cases, provide examples of solutions that are already being deployed, and offer practical steps on how organizations can use gen AI to enhance their M&A capabilities.

How gen AI is gaining traction in M&A

For years, our research has shown that taking a programmatic approach to M&A in the long term can significantly boost an organization's performance compared with its peers. Yet M&A execution is a very labor-intensive activity, requiring thoughtful allocation of resources and a balanced focus between integration activities and core business continuity. It is inherent to the nature of M&A that any deal, small or large, requires real work and real people capacity to successfully execute it. Gen AI, like many other technologies, exists to help leaders do more with less, make better decisions, and ultimately help their organizations create value in the long term. More specifically, four categories of use cases for gen AI can materially improve the M&A process: faster and better-quality sourcing of potential targets; expediting the diligence and negotiation process; executing the integration or separation with excellence; and strengthening in-house M&A capabilities

Faster and better-quality sourcing of targets
There is a surfeit of potential companies to acquire, sell to, or partner with. A huge amount of data about these companies is obtainable. In fact, there's so much information that organizations' M&A teams can get bogged down sorting through and processing it all. The most successful M&A programs look beyond their core business, into adjacencies and potential step-outs, and this is where gen AI can be most impactful. Companies are in a race because their competitors are searching for targets, too. They also have to be thorough: target assessment needs to encompass several dimensions to identify the highest-value potential targets with the right strategic and cultural fit. Deal scanning is a prominent, proven use case for traditional AI, but when coupled with gen AI it can go further to find and interpret broader sets of structured and unstructured data, synthesize results to answer quantitative and qualitative prompts, and highlight key elements of strategic, financial, and cultural fit of all potential targets. With gen AI, companies can identify and pursue targets they wouldn't otherwise have on their radar (exhibit).

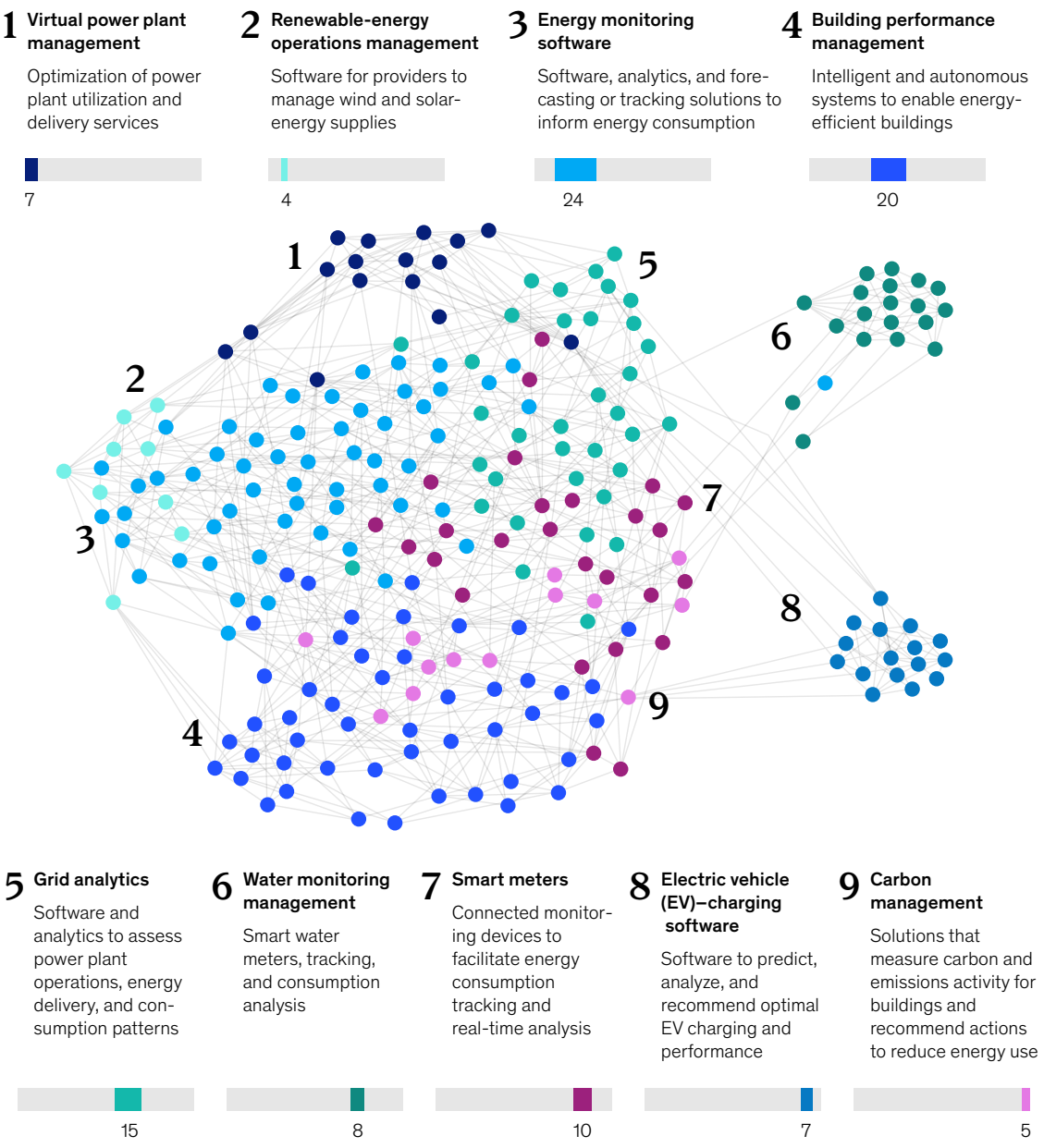
For example, a North American–based company in the consumer-packaged-goods industry used McKinsey's proprietary tool DealScan.AI to search and evaluate potential investments. First, the tool identified approximately 1,600 viable targets according to initial prompts. Then, it applied bespoke quantitative and qualitative prioritization criteria, including whether there was a direct-to-consumer operating model, information about subscription-based product assortments, and details about recent fundings. This led to the prioritization of 40 targets—most of which the company had not considered before—that matched all requirements.

Expediting the diligence and negotiation process
Gen AI can expedite the diligence and negotiation process. For example, it can summarize key diligence documents, surface risks, draft initial

Exhibit

Generative AI not only creates clusters of potential M&A targets but it can also present visual representations of subindustries with specific sets of keywords.

Energy industry subindustry clusters, % share



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memoranda based on a deal's specific parameters, source applicable statutes and regulations, identify helpful case law to ease friction in the negotiations phase, and generate other highly accurate outputs (such as first drafts of the deal announcement and regulatory filings). As one can imagine, these use cases can save a significant portion of the time currently required to perform the different legal tasks involved in deal negotiations, signing, and closing.

Executing the integration or separation with excellence

Seasoned dealmakers know that deal synergies need to be captured quickly—and that sometimes, by taking too long, companies can squander significant value. Organizations going through sizeable M&A events are particularly likely to get diverted and see organic momentum decline, with an average decrease in excess revenue growth of seven percentage points compared with peers.[1] Sluggish integrations can frustrate customers, demotivate employees, and sometimes cause organizations to stall.

Tools powered by gen AI can do a lot of the heavy lifting. In fact, a wide range of time- and resource-consuming tasks can be accelerated and, in some cases, almost fully automated. One striking use case is to have a gen AI "coach," trained on M&A best practices and on the organization's specific M&A playbook, that delivers fast and smart answers to questions from integration and separation leaders and team members. Applications are rapidly evolving, including McKinsey's myIMO, which is powered by gen AI to help improve team capabilities and efficiency. For example, a team could ask the tool, "What are the right steps to integrate the acquired company's brand with our own, and what is the best timing to do that?" Or a team could give it the following prompt: "Draft a memo about upcoming changes in employee benefits considering the following changes." The application is trained on a vast repository of M&A playbooks and best practices to help companies make well-informed decisions about their integrations or separations. Other uses being developed include post-day-one value creation recommendations, such as identifying real-time synergy opportunities based on a company's available data; automated summaries and comparisons of internal policies that need to be harmonized between the two organizations; the quick comparison and harmonization of job title and hierarchy structures, cost center, and general ledger definitions; and the automation of change management activities. The list goes on.

Strengthening in-house M&A capabilities

Gen AI can strengthen a company's internal capabilities by drawing on companies' proprietary data from past deals to assess performance patterns and find insights about untapped opportunities. For example, it could assess a company's portfolio of acquisitions and calculate the impact brought by each deal. It could also generate postmortem insight about how deals affect the business (for example, how and when the company's organic revenue growth is typically affected after closing a deal). It could update the company's proprietary playbook with recipes, nuances, and lessons learned (for example, "Deals of up to $1 billion typically require an integration team of five people, focused on the following tasks."). It could even generate personalized training programs in line with the specific function of an integration team member, as well as with the acquisition type and the deal timing (based on the following prompt, for example: *"I am new to the team. I will be leading the HR integration for our acquisition of X company. What do I need to know? Where do I start?"*).

How to get started

Gen AI will not fix a broken approach to M&A; it might even exacerbate it. The first step for senior leaders is to frankly assess their current level of M&A capabilities and to consider where in the M&A process technology can be used to materially improve the M&A engine.

[1] Based on the 1,000 largest companies in McKinsey's annual Global 2,000 analysis. For more on the methodology of the Global 2,000, see "The seven habits of programmatic acquirers," August 24, 2023.

The next steps are just as foundational:

— *Prioritize the gen AI use cases that create the most value.* If your M&A strategy is focused on acquiring dozens of very small players, gen AI will have the greatest impact on opportunity scanning and assessment. Conversely, if you do one to two larger deals a year, gen AI may also help you streamline and accelerate the execution processes.

— *Drill down on whether to develop or to adopt.* There is a full spectrum of choices for how a company can bring its prioritized use cases to life, and off-the-shelf solutions have recently been brought to market—with more expected over the next one to two years. As with any decision to either use in-house resources or outsource, leaders should consider their team's existing expertise, the size of the required investment, the extent of the potential return (including how sustainable any competitive advantage would be), and the actions that the company's peers are or could be taking.

— *Ensure that the right guardrails are in place.* Gen AI is distinct from most existing technologies because it *heightens* certain risks—for example, security breaches, given its ease of access; reputational risks from quality control missteps; and potential intellectual property infringement. Legal and regulatory developments are fast moving, even as gen AI races forward. And the better the AI models are, the greater the potential risk that humans will simply disengage and not catch issues until it's too late. It's essential that organizations keep human beings at the forefront of the work, proactively identify and mitigate risks in partnership with their legal and technology teams, and maintain rigorous ethical standards.

Gen AI is a predictive language model, not a human being. As companies navigate the gen AI transition, they should consider how to use their newly freed-up time to focus on more strategic, high-value activities such as relationship building and eureka-moment problem solving, which technology cannot (yet) replace.

Commercial applications of gen AI in M&A are already gaining traction and will almost certainly accelerate in the next few years. The greatest question is not *whether* gen AI will affect dealmaking—it already is—but to what degree, how quickly, and to what consequence. We'll be monitoring these developments in real time as they proceed.

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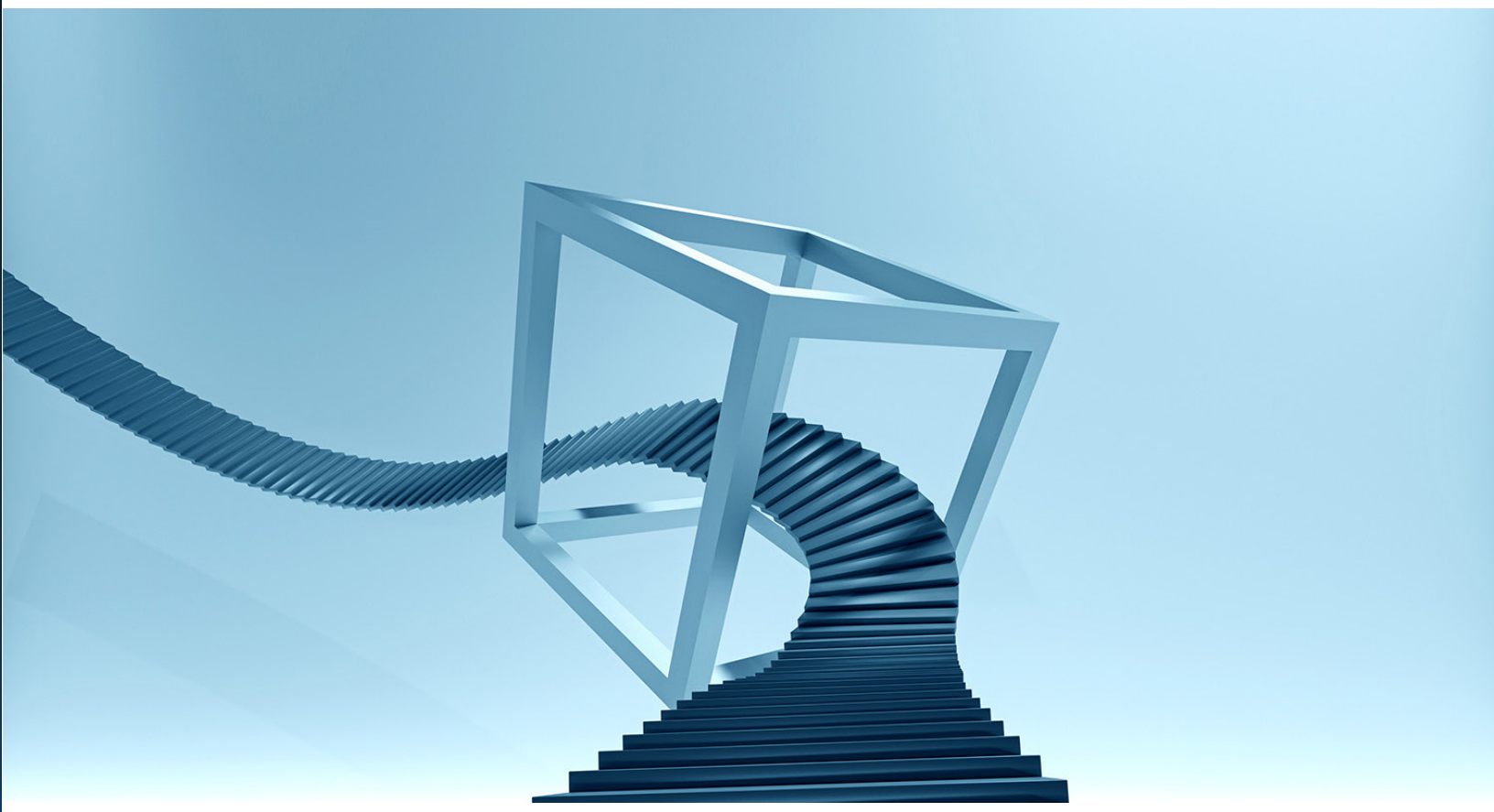
This article was edited by David Schwartz, an executive editor in the Tel Aviv office.

Uncovering opportunities across the investing universe

The next era of private credit

A new private credit ecosystem is emerging across asset managers, banks, and insurers. Here's what it means for the industry.

by Fuad Faridi, John Spivey, and Ju-Hon Kwek
with Henri Torbey and Luca Bionducci



Private credit has been one of the fastest-growing segments of the financial system over the past 15 years. The asset class, as commonly measured, totaled nearly $2 trillion by the end of 2023, roughly ten times larger than it did in 2009.[1] While that total remains a small fraction of the broader fixed-income landscape, private financing solutions continue to perform well—and win, in many instances—against bank and public alternatives. In fact, our analysis suggests that the size of the addressable market for private credit could be more than $30 trillion in the United States alone (Exhibit 1).

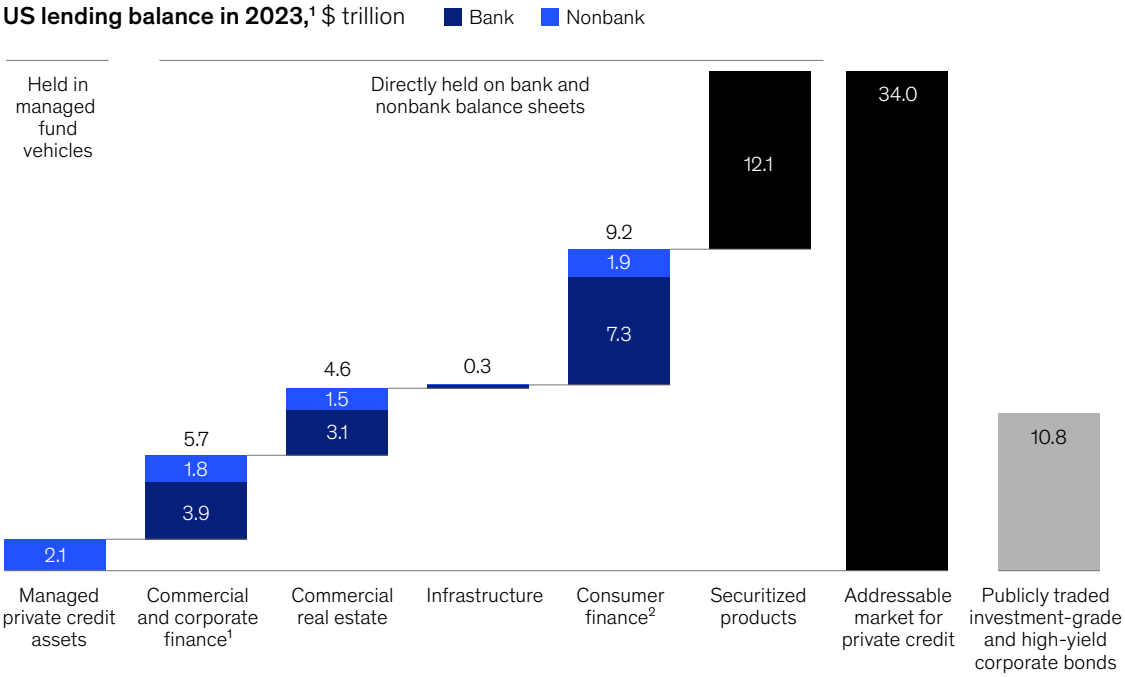
Private credit's growth to date has been largely concentrated in direct lending, a strategy fueled by the twin tailwinds of banks' retrenchment from leveraged lending and private equity's (PE) rapid expansion. But amid the higher rate and slower PE deal environment, the asset class has begun to expand into new areas, including a wide variety of asset-based financing structures.

At the same time, the sources of capital seeking private credit exposure continue to diversify, with significant inflows from retail and insurance capital pools. Additionally, the competitive landscape has become broader and more crowded, with increasing direct participation from insurance companies, traditional asset managers, and even banks.

These changes present both challenges and opportunities for market participants across the

Exhibit 1

Private credit continues to diversify into a broader array of assets.



[1]Includes aircraft and railcar leasing, equipment leasing, receivables financing, standard corporate loans, and trade finance.
[2]Includes auto loans, credit card receivables, residential mortgages, student loans, and unsecured personal loans.
Source: Preqin; Securities Industry and Financial Markets Association; Global Banking Pools by McKinsey; McKinsey analysis

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[1] Preqin, accessed August 2024. The cited market size primarily includes capital housed in managed vehicles, mostly closed-end comingled funds, with a stated investment strategy of originating and holding private loans. It doesn't, for the most part, include capital invested in a variety of credit instruments held on insurance and bank balance sheets or in semiliquid fund structures. While these instruments aren't publicly traded, they haven't traditionally been regarded as private credit, either, though that distinction is breaking down as the market ecosystem matures and grows more complex. For more, see "McKinsey Global Private Markets Review 2024: Private markets in a slower era," McKinsey, March 8, 2024.

lending landscape. Most notably, with banks facing regulatory changes[2] and increased competition from nonbank players, we see the potential for an accelerated transition from bank balance sheets to nonbank entities across a broad range of asset and borrower types.

This transition represents a generational opportunity for existing private-credit funds, other asset managers, and insurance companies that can establish reliable origination in these areas. It also signifies a strategic inflection point for banks, which will need to adapt their business and operating models in the face of "coopetition" from an array of scaled buy-side entities with long-dated sources of capital.

These shifts could lead to significant changes in the industry, such as a decoupling of asset origination from the downstream parts of the value chain. A new breed of partnerships and open-architecture business models could emerge as a result.

To remain competitive in the new landscape, we expect that market participants will need to continue to differentiate themselves in sourcing and fundraising. Scale (as measured by the depth and breadth of capital) and the effective use of technology represent two ways to do this.

While we expect that private credit is here to stay—and indeed, grow—risks need to be carefully monitored. Elevated losses to some companies in a recessionary environment are likely. The credit-investing fundamentals of prudent underwriting, robust portfolio management, and clear communication to investors on the risks they are taking are expected to remain as important as ever.

Defining the next era of private credit: Four trends

As private credit continues to grow, a new industry ecosystem with more symbiotic linkages across asset managers, banks, and insurance companies is emerging. It will support the origination, syndication, structuring, and distribution of assets at significant scale. We expect four trends to define this new ecosystem: expansion of private credit into a broader array of assets, rise of ecosystem partnerships and open-architecture business models, amplified advantages of scale for competitive differentiation, and increased focus on technology to boost scale and performance.

Expansion of private credit into a broader array of assets

Private credit is expanding to include a broader range of asset types and new sets of borrowers. In our view, four asset classes in particular will increasingly shift to nonbank lenders:

- asset-backed finance, particularly segments that feature higher-risk-adjusted yields attractive to institutional investors (for example, aircraft loans and equipment leasing)
- infrastructure and project finance assets with relatively long durations (five years or more)
- jumbo residential mortgages, particularly those with high loan-to-value ratios and, for nonprimary residences, those that are classified as "nonconforming" under bank regulations
- higher-risk commercial real estate, for which banks are increasingly seeking to reduce their exposure

Each of these asset types ranks highly against at least one of three criteria that contribute to a propensity to transition off of bank balance sheets (Exhibit 2).

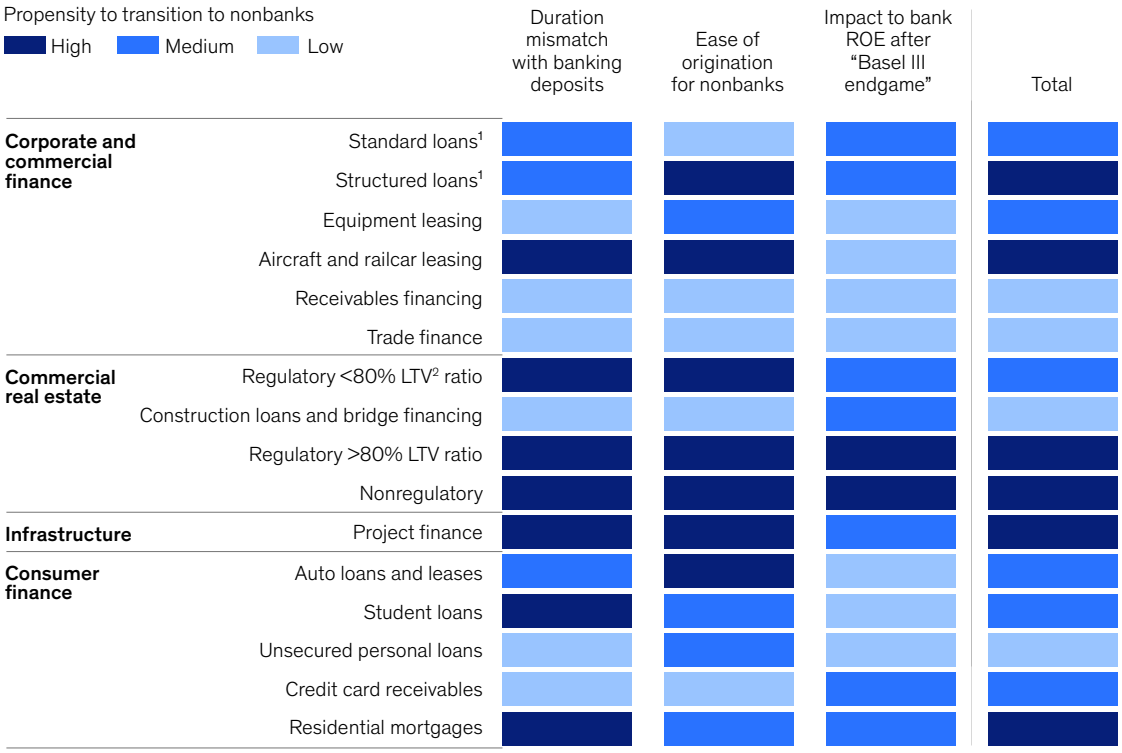
In the United States, we expect that an additional $5 trillion to $6 trillion of such assets could shift into the nonbank ecosystem over the next decade, provided that the following three assumptions hold: interest rates remain elevated above pandemic-level troughs; yield assets continue to perform in

[2] Changes include the Basel Committee on Banking Supervision's finalization of Basel III, often called the "Basel III endgame" proposals, which are expected to take effect next year. They would require banks to increase capital reserves in a range of lending areas. They would also include new rules focused on liquidity that could emerge in the wake of multiple recent bank failures and reduce banks' appetite for longer-duration loans.

Exhibit 2

Infrastructure, asset-backed finance, and higher-risk commercial real estate are among the asset types most likely to transition to nonbanks.

Assessment of factors affecting nonbank penetration of US asset classes



[1]Impact on corporate loans will vary based on the type of borrowers. Examples of structured loans include acquisition finance and leveraged finance.
[2]Loan to value.
Source: Global Banking Pools by McKinsey; McKinsey analysis

McKinsey & Company

line with their historical range (and do not, for instance, experience accelerating credit losses); and the current regulatory environment for banks persists.

Rise of ecosystem partnerships and open-architecture business models

This shift in the natural owner of certain credit assets is expected to create opportunities for market participants to enter new areas of the value chain, either directly or via partnership. It could lead to the development of open-architecture business models in which different entities originate loans than hold or manage them.

Banks could partner with asset managers and institutional investors to sell assets as they selectively shift to more asset-light business models. They could continue to own the last mile to the client, focusing on originating loans and cross-selling fee-based businesses (for example, cash management, foreign exchange, and advisory services). In parallel, they could move the final ownership of those loans through several mechanisms, including expanding traditional syndication capabilities to a broader set of investors, using forward-flow agreements, emphasizing asset sales, pursuing synthetic risk transfer trades, and even creating asset management vehicles in

partnership with private credit companies. In doing so, they could become originators and distributors rather than end owners of risk.

Insurers, particularly those focused on certain types of liabilities (for example, fixed annuities, fixed indexed annuities, and pension risk transfers) and with offshore balance sheets, could move upstream into origination. For example, some carriers are building or acquiring direct-origination capabilities across private credit asset classes that suit their liability profiles. Others are partnering at scale with banks to acquire assets without having to build their own origination network.

Higher allocations to private credit and, at times, ownership of origination, is likely to improve the yield on the insurer's general account, which can allow more competitive liability pricing and increased ROE. This is especially true when the liabilities are housed in offshore balance sheets, since in offshore jurisdictions, certain types of private credit assets have lower capital charges.

Asset managers, particularly those with a first-mover advantage in private credit, could distribute products to new end investors, such as insurance companies and high-net-worth individuals. Alternative-asset managers have also been acquiring insurance carriers and leveraging offshore reinsurance to grow their permanent capital under management and rapidly build their credit capabilities.

When done prudently and effectively, these new business models can match assets with institutions suited to hold them, with potential benefits in financing the real economy.

Amplified advantages of scale for competitive differentiation

The bulk of private credit's growth over the past decade has been concentrated in direct lending strategies, which historically have primarily financed highly leveraged midsize companies typically owned by PE. A lender's ability to anchor or lead a given facility through a scaled commitment continues to be advantageous in both access and deal terms in this market.

As private credit's footprint expands into additional, larger subsectors, possessing a certain scale may well be the cost of entry. Only the largest lenders are likely to compete for multibillion-dollar financings of investment-grade companies, major infrastructure projects, and the largest commercial real estate financings.

There are scale advantages on the fundraising side as well. Incremental capabilities across distribution, operations, and technology are needed to raise capital from retail and insurance capital bases. Larger managers are better able to make these investments.

Increased focus on technology to boost scale and performance

We expect technology to play a more prominent role in the fundraising, underwriting, and operations of private credit investors in this emerging ecosystem. Machine learning and AI can improve underwriting decisions and support more effective portfolio monitoring, particularly across large pools of assets. Alternative data sources can complement traditional data in pricing and risk algorithms. Automation can standardize and streamline credit processes, reducing the time required to make lending decisions. Design and user experience capabilities can make it easier and more intuitive to apply for a loan, which is especially critical in consumer and commercial lending, in which customers increasingly expect seamless journeys.

Digital-lending platforms are also likely to become more important. As the universe of private credit expands to include smaller loans for consumers as well as small businesses, these borrowers are likely to prefer to access funding digitally at point of sale or through online platforms. These digital channels will allow lenders to originate loans without incurring significant brick-and-mortar investments. They could also serve as marketplaces that connect banks to end investors and facilitate the distribution of loans through forward-flow origination and securitization.

Preparing for the next era of private credit

Institutions seeking to succeed in this new private credit ecosystem would do well to build additional capabilities to remain relevant and profitable throughout market cycles. As a first step, we believe that there are five questions that all players—incumbents and new entrants—should be asking themselves.

- Which sub-asset classes will be most attractive and scalable, given our risk-return objectives—across asset type, seniority, geography, and other parameters?
- What parts of the private-credit value chain are most attractive for us to participate in, given our client base, risk posture, liability profile, and regulatory setup—for example, origination, distribution, or end ownership?
- How should we access these areas—directly, via partnership, or via a fund manager?
- What targeted investments in supporting analytics, functions, and technology do we need to maximize efficiency and resilience?
- What contingencies—for example, risk monitoring, oversight, and workout capabilities—do we need to ensure resilience in the next credit downturn?

Implications for banks

As banks formulate their answers to the above questions, we see them taking a few specific actions. To explore new business models, banks could start by building greater insight into the specific types of loans they originate that are most attractive to other investors based on yield, risk, and specific investor preferences. Using these insights, banks could then examine their balance sheets end to end across asset classes, clients, and geographies. This will help them form views on where to continue to hold loans on balance sheets and where to partner or distribute, based on capital treatment, investor appetite, liquidity considerations, the importance of asset ownership to the client relationship, and the overall economics.

After banks determine that partnership or distribution is the right model, they could determine the right transaction structure. This could include fund joint ventures or fully proprietary funds, multitrack syndication, more formal forward-flow agreements, secondary asset sales, and synthetic risk transfer trades. Banks could then revise origination, risk, and operational processes and incentives to accommodate these new transaction structures. Banks could also shift the emphasis of their traditional business model based on balance sheet lending to better weather the threat from new nonbank entrants. They could shift their lending mix to less directly threatened asset classes, such as lower-yielding but lower-risk loans, shorter-duration loans, and highly specialized lending for which nonbanks lack expertise. Banks could also selectively take defensive actions (such as repricing and offering to refinance direct lenders) in threatened asset classes for which they wish to continue to compete on balance sheets.

Implications for insurers

As traditional insurers formulate their strategic posture within this new private credit ecosystem, they would do well to reexamine how to compete in the market. First, insurers could explore the capital, duration, and risk constraints that are affecting their current allocations to private credit and preventing them from reaching optimal allocation. They could also explore how to optimize the matching of assets and liabilities to the right ownership structures and jurisdictions. Differences across jurisdictions in regulatory capital charges for different asset classes and liability profiles—and the different needs of owned balance sheets, captive reinsurance (onshore or offshore) balance sheets (when available), and third-party reinsurance balance sheets—create the imperative for a more strategic look at capital allocation.

Institutions would do well to build additional capabilities to remain relevant and profitable throughout market cycles.

While making allocation decisions, insurers need to assess their conviction in the long-term demand of their general accounts for various subsectors within private credit (for example, consumer-asset-backed finance versus commercial and subasset classes within real estate). This will help them determine where to have long-term exposure. The size of potential deployment over the next three to five years, the duration and liability profiles, and the level of reputational risk and regulatory changes, among other factors, will play a part in the determination. Insurers would also do well to consider if they want to create privileged origination access to scarce, high-quality assets to capture some of the economics that the use of third-party-managed funds cedes. Forward-flow partnerships with banks or originators can be suitable for sectors for which industry participants have limited long-term-demand conviction but would still like to invest for diversification benefits. Direct origination might make more sense for sectors with more demand tailwinds that justify a greater resource commitment.

When insurers decide to participate directly in origination, they could maximize the value of that origination. This happens by syndicating excess commitments to other parties and by creating third-party-fund vehicles that drive additional capital-light earnings. Insurers could also benefit from continuing to invest in robust portfolio management and monitoring.

Implications for asset managers

For asset managers that already have a foothold in one or more private credit verticals, the expanding footprint of the asset class presents an opportunity to extend their platforms into new asset classes and capital bases, some of which have the potential to be many times larger than the current market. For managers with fledgling or nonexistent private credit programs, establishing a presence in the market is likely to become increasingly important.

We expect leading managers over the next several years to pursue one or more of the following initiatives:

- establishing or acquiring origination and underwriting capabilities beyond sponsor-backed lending, including asset-backed finance, project finance, and real estate debt
- diversifying capital bases to include longer-duration or lower-return threshold capital pools, enabling broader participation across the risk-return spectrum
- driving scale across more and larger vehicles while also developing more sophisticated internal and external syndication capabilities to increase relevance to larger borrowers

— seeking accretive partnerships with other ecosystem players, including banks, insurers, and solution providers

— streamlining and consolidating middle- and back-office loan operation capabilities to enhance flexibility, profitability, and speed to market

— instituting reimagined operating models that reflect a convergence of financing and lending solutions across a full spectrum of credit strategies, fully merging private credit, insurance, and other distribution channels (for example, business development companies, interval funds, and wealth) into a more cohesive whole

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The expanding footprint of private credit—and the associated migration of trillions of dollars of assets from bank to nonbank balance sheets—represents a significant opportunity for industry participants.

While we believe that private credit is here to stay, careful monitoring of short-term risks is still necessary, particularly in the event of an economic downturn in which a range of loans may become stressed or distressed.

As the market grows, the regulatory paradigm in the industry will also evolve. The insights outlined in this article, along with the foundational tenets of credit investing, including clear investor communication, robust monitoring and workout capabilities, and underwriting discipline can help players succeed in this new private credit ecosystem.

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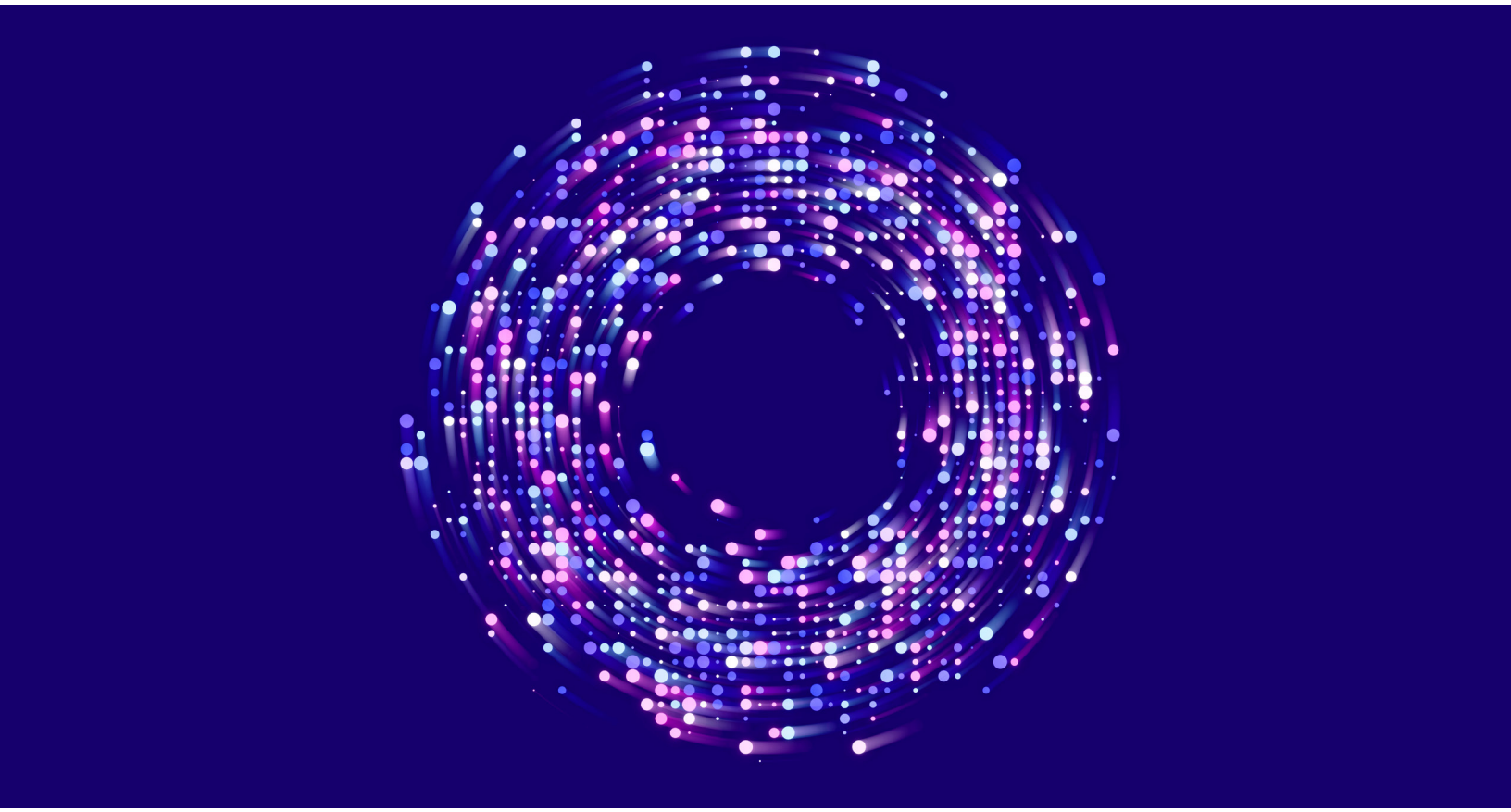
The authors wish to thank Andrew Reich, Csanad Kortvelyessy, Denis Francis, Edgardo Bonilla, Enrico Muti, Joseba Eceiza, Josue Ulate Chinchilla, Laura Johnson, Matthieu Lemerle, Rajiv Dattani, Ramnath Balasubramanian, and Richard Luft for their contributions to this article.

Antares Capital's Vivek Mathew on the rise of private credit

Antares Capital's Vivek Mathew talks about the growing popularity of private credit as a financing option, and what it means for investors.



Private credit has become a more popular financing option across many industries and types of businesses—and the opportunity for investors to deploy this approach is growing. Former McKinsey partner Brian Vickery spoke with Vivek Mathew, president and head of asset management at Antares Capital, one of the world's largest private credit managers. They discuss how the private credit landscape has evolved, how the current market has affected or introduced opportunities for investors, and what trends investors should be aware of in the future.

How private credit has gained in popularity

Brian Vickery: Let's start by talking about the excitement we're seeing in private credit and where it's coming from. The narrative about private credit for the past several years has been overwhelmingly positive, though the recent environment might be a little bit different. More broadly, we've seen record fundraising, great performance, and a lot of growth in the space.

Private financing has been around for a while, yet the amount of money flowing has substantially accelerated. Our research shows that LPs still cannot get their hands on enough private credit and remain substantially underallocated to the asset class. So why are we seeing all the excitement?

Vivek Mathew: We don't believe that this age is necessarily better than other ages in the industry. There are a lot of new players in private credit and a lot of new people raising capital. [Antares has] been around for almost 30 years. We started the company back then for the same reasons why private financing is attractive today. There is a premium for liquidity. There's an opportunity to lend to fantastic companies that are owned by private equity sponsors. You can get access to a lot of research and information [for investment opportunities]. There are many reasons why [private financing] is a fantastic asset class, and I think other companies have realized that, too.

I do think we are in a bit of a "Goldilocks zone," where rates have been high enough that we can lend and make a decent amount of money, but they aren't high enough to have caused widespread issues. Now, the consensus is that we may be moving into a soft landing. If rates come down a little bit because we have a handle on inflation, then we feel that the M&A market will pick up. The most important thing to the success of a private credit lender is the backdrop of the US economy. If the economy is in a healthy place, then rates will come down and extend the Goldilocks period.

Brian Vickery: You mentioned that this Goldilocks period is not necessarily different than the cycles you've seen in the past, but there's certainly more capital that has to be coming from somewhere, whether it's from pensions, sovereigns, endowments, or private money. What is changing in the LP landscape?

Vivek Mathew: Investors across the globe are more in the accumulation phase. In private credit, we haven't reached a saturation point. For example, in Japan, though rates have come up a little bit, the environment is consistently low rate, and they're looking to continued external investment from private credit. As another example, in South Korea and the Middle East, we've tried to educate investors to help them diversify and increase alternative investments. In those two regions, alternative investments for many years mostly meant private equity and real estate. Now, we're educating them about private credit as another potential option. In the case of the Middle East, they've made a lot of money on energy recently, and they're looking to further diversify that. So there's more capital coming from that region.

In the United States, most investors have some exposure to private credit, but perhaps not enough. Take an insurance company: the strategic asset allocation to private credit but, given the industry's capital benefits, the credit exposure is probably too low. So they're considering how to create a more diversified portfolio of private credit so that they're not doubling down on the same types of risk.

The total addressable market for private capital and how it has evolved

Brian Vickery: In terms of the money that's coming into the space relative to the opportunity available, how should investors think about the addressable market?

Vivek Mathew: The total addressable market or the total opportunity to lend is growing faster than the capital that is flowing in. Spreads over the past six to eight years—when money started flowing into this space—are a little bit tighter today than they were before. When asset classes are not in equilibrium, and demand outweighs supply, markets are efficient and spreads tighten quickly. Right now, spreads are tightening because the local supply of M&A is lower than the demand.

Zooming out, the total addressable market looks attractive. Private equity has raised a lot of capital. So even though spreads are tightening, the market opportunity could increase quicker than the capital is coming in. Just because private equity has raised the money, we want to make sure they spend it responsibly. If they're struggling to find opportunities and have to sacrifice quality, then that will lead to more defaults and worse credit outcomes for us and our investors.

We spent a lot of time looking at the penetration rate of private equity and seeing how many middle-market companies are owned by private equity—that number is only about 15 percent. It doesn't feel like anyone's stretching. That gives us confidence that the quality of our investments can remain high.

Brian Vickery: The market is growing and ought to grow quickly at some point in the future. Over the past 18 months, deal volume has been meaningfully slower than it has been in the past. You're close to the tip of the spear and seeing the deal flow that's coming across as Antares is financing companies. How are you seeing the current market evolve over the next several months?

Vivek Mathew: It's no secret that the M&A market has been slow: risk premiums went up, and there was a concern with inflation. We have seen a real increase in the pipeline recently, so we're hopeful that M&A will pick up. Still, when a quality asset comes to market from a lending perspective, there's a lot of competition.

The stock market is performing great, so private equity firms are waiting to sell companies to catch rate breaks or grow the EBITDA of the business to have a higher valuation. The additional dynamic that we've observed is LPs interested in return of capital. If sponsors are interested in raising their next fund, there is some return of capital that existing investors may expect to receive, which may catalyze more M&A. Of course, lower rates would be helpful.

Brian Vickery: When I started my career as an LP, we weren't talking about DPI [distributions to paid in capital ratio] as a metric. In the current environment, it seems as if everybody is worried about DPI as opposed to total return.

Vivek Mathew: Once the market picks up, private equity firms don't necessarily want to be the first ones to [try to make returns on their investments], but they also don't want to be the last ones selling similar businesses to somebody else. That's why we think that when the market picks up, given the amount of capital that's been raised, there could be a real deluge of M&A for a lengthy period.

'The total addressable market or the total opportunity to lend is growing faster than the capital that is flowing in.'

Managing current market conditions and risks in portfolios

Brian Vickery: You talked about private equity marks and how some of those marks are high enough that firms might be able to sell an asset today. How does that translate into your portfolio or your competitors' portfolios? Several years ago, we weren't worried about the private-lending portfolios and the capital that had been put out. More people are concerned about the risk embedded in those portfolios today. How should they approach that concern?

Vivek Mathew: The risk in our portfolio has been manageable because the US economy has been resilient, and our portfolio has exceeded expectations. In the past several quarters, though growth has been slowing, revenue and EBITDA growth have been positive. A year ago, we weren't expecting positive growth overall across our portfolio. Certain sectors are more challenged—many of them were greatly affected by COVID-19, such as aerospace, some consumer sectors, and some subsectors of healthcare. But these are fairly niche parts of our portfolio.

Right now, we're focused on liquidity with higher rates, and we spend a lot of time trying to understand the situation of a portfolio company. We understand when they're drawing money and what they're using it for. Revolver draw is something that often is an early indicator of risk. We do think that losses are going to be higher in 2024 and 2025 than they have been. So there will be more opportunities to restructure, and having those capabilities and resources to do so will be important.

When we think about peak losses that we've seen in the industry, in the 2008–09 period, we saw about a 1 percent loss, which is worse than now by a long shot. Just because losses in the near future may be higher than they have been doesn't mean it's not a good time to invest. In fact, we think this could be one of our best vintages, even if losses go up a little bit.

Brian Vickery: How do you think about the operations and the workout potential of an environment in which there are more losses? Are you and your peers positioned to be able to recover in that environment? If we do see more distress, you might anticipate it, even if you don't reach peak levels.

Vivek Mathew: There's a real differentiation in the market among companies that spend a lot of time, energy, and resources on preparing for possible losses. Because there are a lot of newer entrants in the market, most of them have not invested heavily in stressed environments. But having these capabilities provides a lot of value for investors.

Underwriting is going to matter more. Firms should consider if they're picking a company that has reason to exist and is a market leader. There's a real skill to having conversations once something goes wrong and having the capability to take over the company. That's never the goal, but it's important to have those capabilities if necessary.

In the latest cycle, there was a fair amount of stressed and distressed raised capital that was returned. I think the market will be able to

> 'Firms should consider if they're picking a company that has reason to exist and is a market leader.'

absorb those potential opportunities, but the beneficiaries of those opportunities may be different firms from those that originated the assets because the original firms don't necessarily have these workout capabilities.

Brian Vickery: As rates come down, how has the environment today changed how you think about underwriting new deals?

Vivek Mathew: First, we've diversified our portfolio a lot [to protect against risk]; we lend to about 500 companies. Sometimes it takes more work as a direct lender to be so diversified because you have to manage how much capital you're allocating to each asset. Diversity comes from not only the number of companies but also in the details of a company. So we also diversify sponsors, the kinds of industries we invest in, and the customer and supplier concentrations.

Because rates have risen, the interest coverage that we're experiencing today is different than the interest coverage that we have experienced, and we also try to adapt to everything going on in the world [to protect against risk]. COVID-19 validated a lot of how we underwrite.

Approaching the competitive landscape and diversifying assets

Brian Vickery: Banks and syndicated channels have reemerged recently. How are you experiencing today's competitive environment? How is it evolving?

Vivek Mathew: The total addressable market for private credit has grown. There are more opportunities for private equity, and the syndicated market has come into play as a potential option for private credit more than it has in the past. And there's been a push and pull with that part of the market.

There was a time when BSLs [broadly syndicated loans] and capital markets weren't functioning well. There was a negative outlook on the future of the economy, and inflation was a concern. Risk premiums caused by geopolitical events had gone up, and confidence in syndication was low. Private credit came in and filled that gap. There were opportunities to lend to larger companies that weren't traditionally considered with direct lending.

Now, banks have worked through risk on their books, and the BSL market has been functioning well. When banks came back, they were eager to recoup some of the market share that was lost to direct lenders. There's been a lot of refinancing—it's not net new money, but it's activity. I think moving forward, private credit will always be an option for the syndicated market, as well as the public option.

Brian Vickery: When it comes to broadening product capabilities, how could companies put money into other parts of the fixed-income spectrum, apart from the traditional ways?

Vivek Mathew: I think any business asset manager is always thinking about the obvious natural extensions of what they do, what capabilities they have, and what infrastructure they possess. A few things are likely to happen. One is that scale will become increasingly more important, just as it has in private credit. It will become harder for smaller managers to add value in the growing market as scale and access become more important. I think you'll see some consolidation and M&A in direct traditional senior lending.

Second, some managers will expand geographically. For example, I could have a relationship with a sponsor in the United States that has a business in Europe. It makes sense for me to capture the additional wallet. I already have a firmwide relationship. If I get to know some different people, we both could do more with that relationship. Effectively, the total addressable market for any given party will grow.

Third, there is a lot of room for growth in the market for credit secondaries. Junior capital is a natural area in which to expand. Lenders like us have traditionally been focused on the senior side, and we possess the skills and access to expand that.

Last, we've only scratched the surface from a wealth and insurance perspective. Wealth is not a new access point for private credit, but alternatives allocations for an insurance company are probably substantially higher. There's a lot of value that we and other direct lenders can add to a wealth investor's portfolio. From our perspective, it makes sense to diversify our capital base.

Brian Vickery: What's something you think may happen in the next few years that others maybe aren't expecting?

Vivek Mathew: It's been interesting to see how the rate of spread changes in the market. Spreads were steady and consistent for a long time. As M&A has slowed, the supply and demand dynamic has picked up, and spreads have tightened rapidly. I also think defaults will go up. I think investors will then focus even more on alignment. The traditional kind of capital-light asset investor might start looking at alignment and incentives differently as we see some change in the market.

Vivek Mathew is president and head of asset management at Antares Capital. **Brian Vickery** is an alumnus of McKinsey's Boston office.

Comments and opinions expressed by interviewees are their own and do not represent or reflect the opinions, policies, or positions of McKinsey & Company or have its endorsement.

Maya Chorengel on building the impact investing industry

The Rise Fund's Maya Chorengel discusses opportunities in impact investing today and how the sector has stayed ahead of changing expectations for DEI and ESG.

This conversation between Maya Chorengel, a managing partner at The Rise Fund, and Alexandra Nee, partner and co-lead of the Impact Investing Service Line for McKinsey's Private Capital Practice, was recorded on November 10, 2023. It was part of McKinsey's Women in Private Equity Global Forum, which was held virtually, with an audience of 140 women investors from more than 60 firms across North America. The following is an abridged transcript.

Alexandra Nee: Today, I'm speaking to Maya Chorengel. Maya is co-managing partner at The Rise Fund, a series of multisector global impact investing funds managed by TPG that currently total more than $8.8 billion in AUM [assets under management]. Prior to that, Maya co-founded Elevar Equity, was managing director of the Dignity Fund, and invested for Warburg Pincus. She also co-authored the article "Calculating the value of impact investing" for Harvard Business Review.

Welcome, Maya. We are thrilled to have you join our Women in Private Equity forum. For context, many of the women joining today are investors in private markets; some are already in impact investing. And many, myself included, are currently outside observers excited about potentially getting into impact investing. Could you tell us a bit about how TPG's Rise Fund came to be? What led you personally to impact investing?

Maya Chorengel: I came into TPG in 2017 as the first dedicated individual to launch what became The Rise Fund and is now one of the world's largest impact investing platforms at $19 billion.

I started my journey in impact investing about 13 years prior after I left Warburg Pincus. I had a personal interest and curiosity about whether I could use the skills I had learned in private equity and investing to invest in companies that were explicit about creating good in the world. I thought I had seen enough situations where it was possible to take a business approach or a commercial approach to solving big problems.

Fast-forward to 2016 and impact was blossoming in the venture space, but at the time, TPG recognized that this was a cottage industry that wasn't really scaling. But TPG also saw that there were interesting growth-stage impact companies to invest in, that it was important to invest with values, that it was important to stay innovative, and that it was important to invest in trends that might push the world forward over the next few years.

I was one of the few individuals who grew up in private equity but made a leap into impact investing. And I was one of the early leaders in that space proving through a venture-stage fund that we could achieve full risk-adjusted financial returns while investing exclusively in companies that were doing good. I was able to bring those two things together within TPG, backed by the leadership of the firm to do this work. It was indicative of TPG's character, the problem-solving, innovative approach.

Alexandra Nee: You mentioned a bit about the industry overall, but I would love to get your thoughts on the state of impact investing today. Where are we right now, and how have things shifted in the past several years?

Maya Chorengel: It has certainly gone through a lot of growth and change.

The term impact investing was coined back in 2007. The term was used at that point to describe early efforts, such as the one I had at Elevar, that were attempting to use the investment toolkit and private capital to do good in the world. At that time, most of the funds were on the emerging-markets side and were less than $100 million in average AUM [assets under management]. The first fund I ran in impact investing was a $7 million fund. After that, I ran a $24 million fund, then a $75 million fund.

Most of the funds were investing in the venture category. Many of them were investing in the emerging markets, and institutional investors had not entered the category as LPs because the funds were not large enough for them to be able to pay

attention. Many institutional investors can't invest less than $20 million to $50 million, and you can't do that in a $100 million fund because you don't want to be an outsize portion of the capital.

Importantly, many institutional investors had not entered the space because there wasn't a sufficient track record on financial returns. As fiduciaries of pension funds and sovereign wealth funds, institutional investors were not able to invest in a category unless they could demonstrate to their investment committees that they could generate full risk-adjusted returns with no compromise.

Impact investing has grown tremendously since then. Bain started a fund called Bain Double Impact at the same time as TPG. We were the first two private equity funds to come into the market. The Rise Fund's first fund, at $2 billion, was four or five times larger than the largest fund that had been raised in impact investing up to that point. Bain's fund was a US-focused effort and smaller in scale. Ours was a global effort.

We had many of the top institutional investors from across the United States, Canada, and Europe invest with us. All of them were first-time entrants into impact investing because TPG committed to bringing the same investment underwriting team and standards as conventional investing to impact investing.

So, since 2017, which was the watershed moment when Bain and TPG came into the market, more private equity firms have come in. And that was a core part of our thesis—to show that impact investing could be done successfully at scale. The market used to be venture-based. It now has growth equity and is moving into buyout equity investing.

The other seminal trend is that the category has changed from what I'll broadly define as multisector. Back in 2017 at The Rise Fund, we were investing in social categories such as healthcare, education, and financial services. We still do, and we invested on the environmental side in what was historically considered clean energy. The environmental side is now called climate investing and has expanded exponentially.

What we've seen over the years, and the direction in which we've led the market, is a move from venture to growth to buyout and now into infrastructure and public equity. There's a proliferation of asset classes and institutional investors coming into the market. More private equity firms and large alternative investment firms are launching different strategies, but there's tremendous growth, especially on the climate side.

Alexandra Nee: That's helpful context. As we think about more folks playing in the space, does that change TPG Rise's approach to finding good deals? Where do you see the most potential for the sector, given this increase in competition?

Maya Chorengel: Capital has definitely flowed in. More firms have launched initiatives, but I would say that we are still at the early stages of development of the market. Competition per se isn't at all fierce.

There is an industry network called the Global Impact Investing Network that tabulates how much capital is flowing into impact investing. The firms that responded to the surveys in 2017 said they had about $95 billion in AUM dedicated to impact. Those same firms today are investing roughly $200 billion. That's a 20 percent growth rate over the last five years. But if you contrast that $200 billion against what is stated in the United Nations Sustainable Development Goals [SDGs] as the capital needed per annum to drive commercial solutions to solve the big problems of the world, we need roughly $4 trillion a year to invest in climate solutions, education solutions, and healthcare solutions to meet the UN SDGs by 2030.

The gap between available capital that's dedicated to impact and needed to drive solutions is still quite large. Most of the competition, if we find it, is still from mainstream investment funds, not dedicated impact or climate funds. There's also a

growth and buyout layer in which former energy funds that were more fossil fuels- or emissions-heavy are converting to climate investing.

One of the hopes we had at TPG was that others would follow us into impact investing. Part of the curation role of funds like ours is to say, "Here's where it is possible to drive full risk-adjusted returns while investing in companies that are doing good." Commercial capital is not a silver bullet that solves all problems, but where you can find it, it is more abundant than philanthropic capital or development aid, and we should put that capital to work.

Alexandra Nee: One of the things I've noticed and gotten a lot of questions about is that recently, terms such as ESG [environmental, social, and governance] or DEI [diversity, equity, and inclusion] and even impact investing have become a bit politicized. From your vantage point, how, if at all, has that affected the sector—or deals or funding?

Maya Chorengel: It is unfortunate that we live in a world where so much has become weaponized or politicized. The anti-woke, anti-ESG movement that is happening in certain quadrants is concerning because I think that the movement is emotion-based and not fact-based.

The way we approach the market when talking about ESG or impact is to put our heads down and let the work speak for itself, which has always been our modus operandi. We do unapologetically talk about the impact that our companies generate. We put out an impact report that is very extensive and contains our methodology and analysis. We look at every company and calibrate their potential using our internal methodology. How much impact has this company generated over the year—and cumulatively since we have invested? That analysis is attested to, which is the functional equivalent of being audited by KPMG. Importantly, we ground our impact analysis in data, research, and evidence.

Politicization does occur in other geographies as well, but it's not weaponized as much as it is here in the US. ESG is fundamentally about good governance and just doing business well, but it has became politicized. So our approach has been to put our heads down to do the work; to be objective; to use data, research, and evidence; and to let the work speak for itself rather than get on a soapbox and pontificate.

Alexandra Nee: For the women today who are looking to advance to the top levels of their firms and possibly even within impact investing, do you have any advice or thoughts on your own journey?

Maya Chorengel: Two streams of thought: one is that I grew up at a time when all my mentors were men. There was one woman who was a VP when I was an investment banking analyst who was very much a mentor, but she was not a senior leader.

What I'm pleased to say is that today I have deep relationships with my peer group of women. I happen to have been lucky enough to go to business school with a strong group of women who have risen to senior levels at private equity firms, venture firms, hedge funds, and investment banks. That peer group and that support group is incredibly strong and important. I would say to cultivate not only mentoring relationships but also a group of friends and a cohort of peers.

The second thing I would say: I thought that the key to success was behaving like my mentors, who were all men. It only came to me later that the whole point is not to be like them but to be myself, and that I would be most powerful if I was most authentic to myself. Have the courage to embrace who you are and don't think that in order to be successful, you have to be like everyone else in the room. Historically, that room has been made of up of mostly white men, but thankfully we are beginning to see that change.

Alexandra Nee: Now for questions from the audience. Maya, how do you see the impact investing industry evolving? Where do you think the market is heading?

Maya Chorengel: The market is still in early stages, but it is starting to mature. I do think that the preponderance of capital is going to aggregate

toward the climate side. We are seeing different asset classes and different kinds of companies emerge: you have venture, you have growth equity, and you have infrastructure. We're starting to see credit funds form for climate. There are also public equity climate-only efforts. Because climate solutions are more fixed-asset and capital heavy, more capital is going to flood into that area, and you're going to see an ability to invest in it from different products.

The social side is growing more modestly. This is partly because social solutions, such as edtech, fintech, and healthcare technology, are more capital-light business models. But also, investors today find it easier to understand climate. Social interventions require more geographic specificity or sector specificity to appeal to what investors care about, which makes them more complicated, whereas the climate story is quite simple, so that area will be easier to grow.

I think a lot of us have an obligation to redefine and recast the narrative around social. A lot of human problems—social equity, et cetera—derive from whether people have access to quality education, quality jobs, and financial stability. It's just much more complicated to define and express, and the industry needs to do hard work to simplify the narrative so investors know how to invest in it. Again, our experience is that there is a massive business opportunity for companies that are creating scalable solutions to bridge these access gaps. Investors can share in their growth and success from both a financial and an impact perspective.

Alexandra Nee: One follow-up from the audience: as the industry continues to mature, how do you see the returns evolve compared to non-impact-investing private equity? And if they're similar, do you think all private equity firms will start to target impact opportunities as well?

Maya Chorengel: One of the myths we're still debunking is that investing in impact is by definition concessionary from a return perspective. We need to show that when you invest well—with a strong impact methodology and understanding of the sectors and types of companies you're investing in—you can find opportunities in which the business itself drives great financial returns, which in turn drives impact. It's complicated because the financial track record is still emerging. So we need to show the marketplace where those financial returns are possible, then do the hard work to invest.

Those of us who are in this space believe that there are tailwinds that could potentially drive alpha for impact relative to other investing. Take climate as a category: there are strong tailwinds behind it, both because of the societal need and because government and regulations are paving the way for the transformative solutions we need for our climate objectives.

'One of the myths we're still debunking is that investing in impact is by definition concessionary from a return perspective.'

Those of us who've been in climate investing for a long time can identify business models that work. How to derisk technology, how to scale the technology, how to bring product to market in the right way: these are all the core things you do when you build a business, but you have to have technical knowledge that is different from what other investors might have.

You can actually drive potentially superior returns because of the market factors if you are early in a market and have differentiated domain expertise. Economics will tell you that the return differential will narrow over time, but there is a window in which you can genuinely drive alpha relative to other private equity return profiles.

Alexandra Nee: Thank you for joining us, Maya. We could have talked to you for twice as long and still had questions. I can't think of a better person to chat with us about impact investing.

Maya Chorengel: Thank you, Alex and McKinsey, for hosting this forum for women investors. Take care.

For more information on the work of McKinsey's Women in Private Equity Global Forum, visit "Women in private equity" on McKinsey.com.

Maya Chorengel is a founder and co-managing partner at The Rise Fund and is a member of TPG's board of directors. **Alexandra Nee** is a partner in McKinsey's Washington, DC, office and co-leads the Impact Investing and Diversity, Equity, and Inclusion Service Lines for McKinsey's Private Capital Practice.

The author wishes to thank Margaux Carré, Sarina Gupta, Aurola Qin, and Victoria Schultz for their contributions to this article and for their support in leading McKinsey's Women in Private Equity Forum.

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Apax global impact managing partner David Su on impact investing

David Su shares his perspectives on the evolution of impact investing and the importance of measurement.

Global private equity advisory firm Apax Partners has a long history of prioritizing sustainability and responsible investing. In 2011, it was an early signatory to the UN Principles for Responsible Investing. In 2012, the firm began collecting and reporting on portfolio company sustainability KPIs, and in 2013, the firm released its first annual sustainability report to investors.[1] Today, the firm monitors more than 140 impact indicators in areas such as carbon baselining, decarbonization planning, board diversity, workforce safety, and antibribery. In 2021, the firm launched the Apax Global Impact (AGI) fund. Sir Ronald Cohen, cofounder of Apax and one of the pioneers of impact investing, now chairs AGI's advisory board. AGI's first fund closed in December 2023 with about $900 million invested.

Former McKinsey partner Brian Vickery spoke with David Su, a managing partner and cohead of the impact investing team at Apax. The two discuss the evolution of impact investing, the importance of measuring impact, the case of AGI portfolio company Swing Education, and a key lesson for impact investors to keep in mind. An edited version of their conversation follows.

Impact investing is evolving

Brian Vickery: How has the impact market evolved, and where is investor interest coming from today?

David Su: The industry has evolved in several ways. First, there were sector exclusions. Traditional private equity funds would avoid certain sectors such as tobacco, firearms, and gaming. Next, investors set minimum ESG [environmental, social, and governance] standards for companies. Today, there's been a fundamental shift to investing intentionally in companies that are directly tackling ESG issues.

Some funds, such as climate-specific funds, are narrowly focused, while others, including ours, are broader. But we all align with customers, employees, and founders in our interest in mission-driven companies. Businesses with strong sustainability characteristics also get premiums in the public markets. Structural support for sustainable businesses—for example, lower-cost financing and regulation—provides strong tailwinds, creating a self-reinforcing flywheel.

Brian Vickery: How would you characterize the LPs who invest in impact funds?

David Su: There are two types of LPs. The first type either has sleeves for impact investing or has transitioned their entire fund to focus on impact investing. These LPs firmly believe we can simultaneously generate market rate returns and material and measurable impact outcomes. The second type may primarily be drawn to our platform strategy—for example, our sector focus or our middle market focus—but it also happens to have an impact lens.

Brian Vickery: The broader fundraising environment has been very challenging for the past 18 months or more. How is that affecting the impact-investing market?

David Su: Although the overall fundraising environment is tough, authentic impact funds with a strong measurement system and a differentiated platform are getting fundraising dollars. We also see tailwinds from the firms that are transitioning their entire portfolios to impact investing.

[1] *Sustainability report edition 11*, Apax Partners, 2023.

Measurement helps ensure accountability

Brian Vickery: You're quite passionate about the ability to measure impact. What does measurement mean to you?

David Su: Our measurement system is central to our impact investment strategy. It subjects the impact of each of our investments to the same level of scrutiny as risk in return. We spent more than six months with our advisory board developing a proprietary system that incorporates impact into every stage of our investment process. It's simple, evidence-based, and adaptable because we are in the early innings of impact investing, and everybody is still learning. It starts with calculating a company's "threshold score" to determine whether it is making the defined minimum level of impact required by our portfolio. Only companies with a score of 60 or higher (out of 100) are accepted.

Once a company is in the portfolio, we calculate an impact improvement score—broken down into scale of impact and the depth of impact—to measure the impact it would generate over four years of investment. We work with the management team to determine those targets and look to tie management and company bonuses and compensation to those targets. We also tie some of our own compensation to the impact improvement score. We set KPIs and hold ourselves accountable on an annual basis.

Brian Vickery: How do CEOs of portfolio companies relate to the measurement system? Do they view it as another layer of bureaucracy coming down from private equity?

David Su: So far, all our portfolio companies have welcomed it with open arms. And it isn't only the management teams; employees like to see that we are a legitimate impact fund that cares about its mission.

Swing Education exemplifies impact investing

Brian Vickery: Can you share an example of a portfolio company the AGI fund has invested in?

David Su: Swing Education is a great example. Swing is an online marketplace that connects substitute teachers with schools—an Uber for substitute teachers, if you will. We all remember a teacher being out sick and the principal or a gym teacher coming into the classroom and putting on a movie. Unsurprisingly, student outcomes are better if a substitute teacher is actually teaching the coursework. Swing is focused on filling absentee days with real teaching days. Additionally, more than 50 percent of substitute teachers have never taught before. Swing is alleviating teacher shortages by recruiting folks from the community and providing them with a pathway to becoming a substitute classroom teacher.

'Employees like to see that we are a legitimate impact fund that cares about its mission.'

Swing checked all the boxes for us from a business and financial underwriting perspective. It is a technology company disrupting legacy staffing providers with a high-quality business model and online marketplace, and it has an exceptional management team. From an impact standpoint, research has extensively proved that more teaching days lead to better student outcomes. Swing is also increasing the teacher supply pool.

We worked with Swing's management team to develop the KPIs we are targeting over the hold period. The scale impact KPIs are increases in the numbers of days filled by Swing substitutes, which equates to more teaching days. The second KPI is the number of new teachers added to the platform or increases in teacher supply.

The depth metrics we're focused on improving are filled-day reliability and quality. For reliability, we measure the percentage of substitutes that showed up compared with those canceling or not showing up. And for quality, we measure whether the school had a positive or negative experience for each filled day.

Look for the negative externalities

Brian Vickery: What have you learned about impact investing that might help others who are newer to this space?

David Su: The biggest lesson is that we're still in the early days of impact investing. We have a lot of discussions on the total impact of companies and on the negative externalities. For example, we were looking at a medical-products company that makes urinary-incontinence collection bags. And although the products have a large, positive impact on patients, the bags are made out of plastic and other polymers, so we focused on the negative externalities of the materials. A traditional private equity fund wouldn't have that discussion.

David Su is a managing partner and cohead of the impact investing team at Apax Partners. **Brian Vickery** is an alumnus of McKinsey's Boston office.

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The new real estate investment edge: Tech-enabled brand, CX, and loyalty

Superior customer experience in real estate combines evocative brands, memorable moments, and low-cost operations.

by Alex Wolkomir, Michael Hales, and Vaibhav Gujral
with Laura Campbell, Nicolette Lewis, and Sam O'Gorman

Customer experience (CX) and loyalty are ubiquitous concepts in consumer-facing industries. But in the real estate world, only the hospitality sector is known for a laser focus on consumer experiences that inspire customer loyalty and build brands. It doesn't have to be this way. Large single-family residential (SFR) and multifamily residential (MFR) platforms now have the scale to build brands that clearly communicate a quality promise and make tenants want to stay.

With an array of premium finishes and residential amenities now commonplace, real estate operators are increasingly aware that economic returns often hinge on creating memorable moments for tenants. What might not be as obvious is the sea change in CX, which has long been understood to involve putting more money and personnel behind a property. The radical difference in 2024 is that operators can upgrade the tenant experience while also saving money—and in a way that can yield better returns for properties. At a time when the high cost of real estate is a major tenant concern, a way to improve the offering without increasing costs can be a welcome innovation for numerous stakeholders.

Memorable brand experiences, combined with the right data and technology to personalize touchpoints—including generative AI (gen AI) and digital marketing platforms—can stimulate willingness to choose a given property, higher renewal rates, and lifetime loyalty. Our experience working with numerous residential players has demonstrated that there is a premium of up to 15 percent between the highest- and lowest-performing players in a market, controlled for similar building characteristics (such as location, age, and amenities).

The highest-performing companies have numerous things in common, including technology investments that enable personalization (such as emails that remember a tenant's birthday or pet's name), new operating and staffing models (such as centralized leasing and renewals teams that serve multiple buildings), investments in brand advertising, and digital touchpoints that create transparency (such as an app for tenants to check on the status of maintenance requests). Tenants clearly perceive more value in buildings managed this way, and this value flows directly to top-line revenue and net operating income (NOI).

To be sure, technology is never the stand-alone superstar. Instead, when companies rewire to create new ways of working, tech can enable fresh ways to operate and serve residents. The key for residential real estate owners and operators is to define the CX moments that matter along a resident's journey, underpinned by a branded North Star.

This article describes how real estate companies can approach CX to encourage loyalty and build brands imbued with meaning by using an eight-step framework. For the purposes of this article, loyalty refers to tenants who perceive value in a real estate brand and respond by either renewing leases or looking for their next home within the same family of brands.

How residential real estate can react to a shifting experiential landscape

Across industries, changing consumer interaction preferences and a proliferation of new technologies, including AI, are enabling companies to interact with customers in new and creative ways. In the post-COVID-19 landscape, proactive self-service that concretely answers specific questions is often customers' first choice, preferred over interacting with a sales representative.[1] Loyalty is an evolving concept, partly because consumers often drop out of loyalty programs after reaping the sign-up reward.[2] Instead, an omnichannel strategy, whereby consumers interact with brands across platforms and continually receive personalized recognition for their engagement, has more impact.[3]

[1] Stephanie Clifford, "Retailers add gadgets for shoppers at ease with technology," *New York Times*, March 9, 2012.
[2] Nathaniel Meyersohn, "Best Buy, Dunkin' and Starbucks changed their rewards programs. Then came the backlash," CNN, January 14, 2023.
[3] Vignesh Wadarajan, "Loyalty programs: What works and what doesn't," *Forbes*, November 18, 2022.

In light of these consumer landscape changes, real estate companies should contemplate three paradigm shifts.

— *From commodity to segment-specific community.* Scaled residential players can contemplate how to build meaningful experiences tailored to specific market segments. Communities can be based around shared values, interests, or priorities. For example, a brand could be known for focusing on providing goods and services (including furniture and recreation) that account for 38 percent of typical household spending.[4]

As companies think about building brands, it's useful to consider sea changes reshaping tenant expectations. As more people work from home, residential complexes may be supplanting workplaces as places of interpersonal connection. A recent poll found that 55 percent of Americans in 2023 placed high importance on community activities, up from 29 percent in 2001.[5] Brands could provide a sense of belonging that is increasingly important to consumers. Real estate companies tell us that when a resident reports that they know someone else in the community, they are more likely to renew their lease. It may be easier to leave four impersonal walls than it is to leave a social circle.

— *From one-size-fits-all to personalized experiences.* Once a resident chooses a home in which the brand dovetails with their lifestyle aspirations, they still want to be treated as an individual within that building. A resident who feels that the property owner handles the important moments (including when they move into the building, receive visitors, and need maintenance) in a way that caters to their individual needs is likely to feel more loyal to the brand behind that building. Not only could this make them want to stay, but when that tenant needs to move, they may be more likely to seek another home from within the brand family.

— *From delayed and manual to AI-enabled instant gratification.* Management activities including leasing, renewals, and completing service requests are often handled in an analog way. This can lead to wait times and experiences that don't meet the on-demand mindsets of today's consumers. Real estate companies can transform operations to blend the best of human and digital interaction, rising to the response expectations of residents. Leading real estate companies are already responding—we have seen companies automate more than 70 percent of interactions, using AI companions and other tools.

The result can be meaningful value: we have observed real estate companies digitally rewire and subsequently enjoy 2 to 4 percent NOI increases, plus additional value from the sale of ancillary services (including event space rentals, cleaning services, and grocery delivery). We've seen even further NOI gains from operating efficiencies.

Eight steps to building loyalty-inspiring residential experiences

Resident loyalty—and NOI growth—sprouts from a foundation made up of digitally enabled customer experiences and strong brand equity. The challenge for C-suite leaders is to pursue these objectives simultaneously while building an individual brand or brand network. Here's an eight-step guide to tackling these objectives.

1. Determine the brand target (the 'who')
Using a combination of attitudinal, psychographic, and behavioral factors, identify the segment of residents a particular brand and associated set of properties are intended to serve. Properties can be thought of as giant, digitally enabled smart products

[4] US Bureau of Labor Statistics Consumer Expenditure Survey. Includes rent, furnishings and durable household goods, recreational services, and food services.
[5] Frank Newport, "Measuring trends in Americans' personal values," Gallup, November 20, 2023.

built to serve a particular segment of residents. For example, an MFR-provided home can be oriented around a set of shared values (including sustainability), hobbies (including fitness), or lifestyle factors (including walkability or proximity to a highway), all of which can help attract more members of that figurative "tribe."

2. Define what is meaningful to each community (the 'why')

Identify what the company is promoting that is distinctive now and is likely to remain so (see sidebar "Branded–owned residential blazes a trail"). As long as companies are tailored to a particular segment of interest, perceived benefits can be practical (such as being close to transportation) or emotional (such as joining a community of like-minded people). To illustrate the value that some tenants place on sustainability or technology features: renters report a willingness to pay 1.0 to 5.0 percent (average 1.8 percent) more for one level higher of energy efficiency[6]; renters interested in smart devices report being willing to pay 2 to 3 percent more for a single smart device (Exhibit 1).[7]

Exhibit 1

A clear view of customer needs can shape multifamily residential companies' smart-home strategies.

Illustrative tenant profiles, valued attributes, and targeted bundles

	Basic needs	Open to adopting technology	Tech-forward convenience
Tenant type	A family living in a single-family rental near their extended family	A working couple with high social consciousness and tech savviness	A couple, both of whom used to be executives, who rent for convenience and don't want to lift a finger at home
Most-valued attributes	• Security and safety features	• Security and safety features • Sustainability-related technology that aligns with their values	• Security and safety features • Sophisticated technology they are proud to show off to visitors
Targeted bundle features	● Core bundle (functionality-oriented benefits for community) • Access (eg, locks) • Safety (eg, cameras, security)	● Core bundle ● Add-on 1 (digital enablers personalized to resident profiles) • Comfort (eg, lights, thermostat) • Entertainment (eg, TV, wireless audio)	● Core bundle ● Add-on 1 ● Add-on 2 (nice-to-have amenity conveniences) • Chores (eg, appliances, cleaning robot) • Wellness (eg, medication monitoring, smart gym) • Curated experiences in flexible amenity spaces (eg, customizable event room)

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[6] Hannah Bastian et al., *Energy labels affect behavior on rental listing websites: A controlled experiment*, American Council for an Energy-Efficient Economy, May 2022.

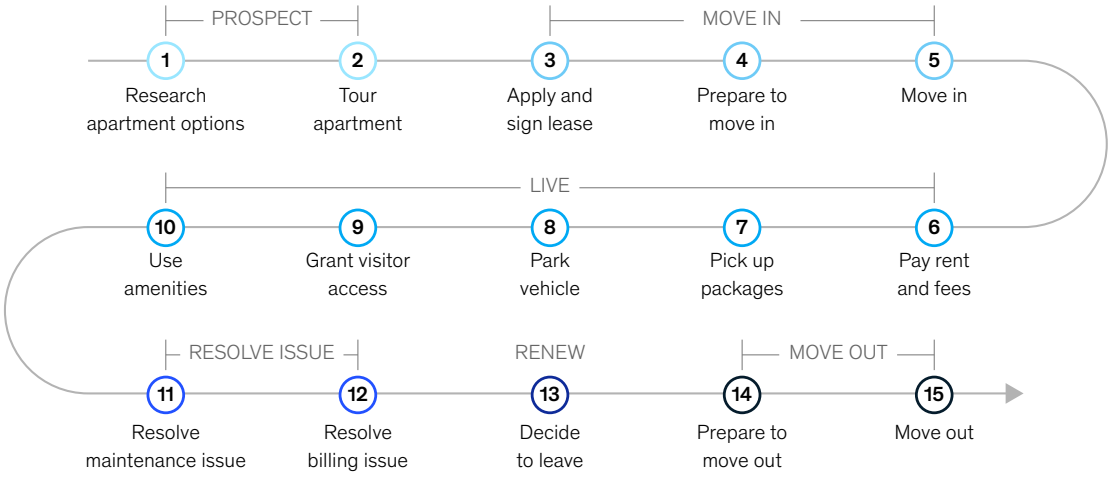
[7] Novid Parsi, "Renters want smart tech—and will pay for it, too," Professional Builder, January 31, 2022; 2 to 3 percent statement is the result of McKinsey analysis, with the average at approximately $37 and the average rent in the United States being $1,700 per month.

3. Identify the moments that matter
For the segment a brand seeks to serve, measure resident satisfaction at each journey stage (such as moving in, midway through lease, and at lease renewal) and understand which steps of the journey are most important to eliciting desired behaviors (such as lease signing, decision to renew, or likelihood to recommend the community to a friend or family member). The goal is to land upon moments that delight, but also that elicit economic returns for the property (Exhibit 2).

Exhibit 2

Real estate operators can transform standard tenant interactions into branded moments of delight.

Illustrative interaction points with a real estate operator throughout a typical tenancy



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Branded–owned residential blazes a trail

Owned residential has seen a proliferation of properties linked to luxury hotel, car, and retail brands.[1] Many of these branded properties have sold at 5 to 50 percent premiums over comparable properties, according to McKinsey's research, underscoring the power of brands to create clear expectations.

By helping residents envision living as they do in their favorite hotels, and then translating the quality promise of a high-fashion brand or luxury vehicle, branded residential has created communities bonded by common passions and values. More recently, residential properties have partnered with fitness and wellness brands.

The success of these brands in owned residential serves as an intriguing model for single-family residential and multifamily residential properties.

[1] Debra Kamin, "The latest cool amenity? A name brand. How about Porsche?," *New York Times*, September 15, 2023.

4. Customize the residential experience

Real estate is both physical and digital; therefore it's critical to think about the product as the combination of a standout property and the human and technology-based interactions within it.

Smart technology is one increasingly attractive way to activate physical spaces. For example, a smart thermostat linked to a sensor on heating, ventilation, and air-conditioning (HVAC) units can allow a resident to turn on the air-conditioning before they get home, balancing comfort with sustainability. An automated nudge can inform a resident that turning down their thermostat by a few degrees could help them spend closer to the building average on heating and cooling and enable them to adjust the temperature remotely. Sensors can detect unusual behavior (for example, if the apartment takes too long to cool down) and alert maintenance teams to issues before they become problems. A leak sensor can play the same role, detecting small drips of water under the sink or behind the dishwasher before they become floods (Exhibit 3).

Customization can also be about highlighting building amenities that matter to specific tenants. For example, a couple of weeks before a child's birthday, a tenant could receive an offer to book the building's party room. Or if the building is aware that a tenant is interested in fitness or nutrition, it can send out an invitation to a special yoga class or cooking demonstration that lets the tenant live their values.

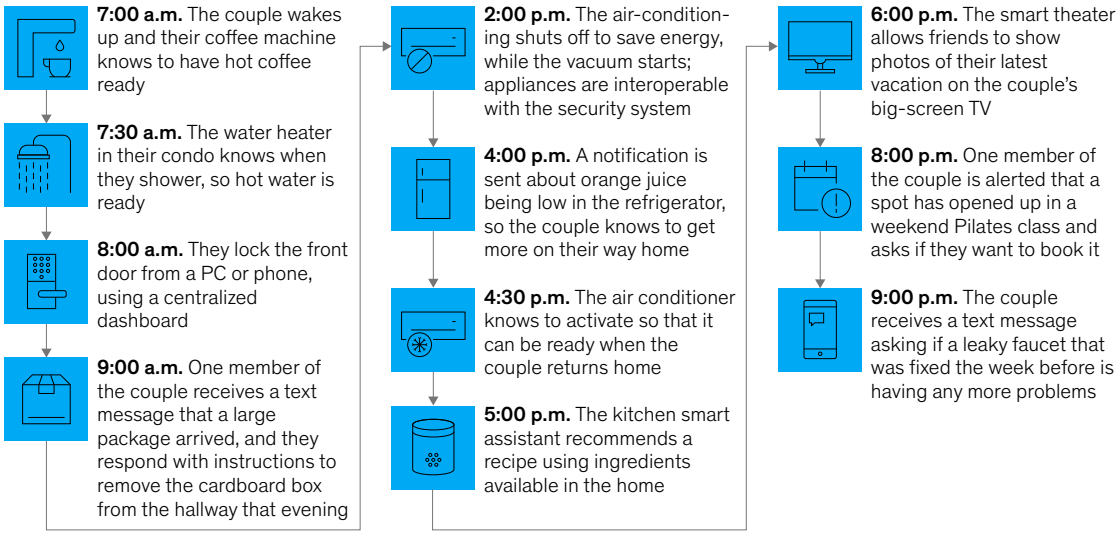
5. Enable CX differentiators with technology, people, and processes

To deliver memorable, branded touchpoints, operators will need an operating platform consisting of the right people, processes, data, and technology. This platform should enable the correct use of resident data and technology so that staff is empowered to make the best decisions. These will likely involve reimagining typical workforce operations and transforming day-to-day tasks with new tools (see sidebar "Incorporating automation can yield better service"). But a word of caution: parachuting new technology into a building that has

Exhibit 3

Multifamily buildings can enable tenants to opt in to smart-home features and experiences.

Illustrative depiction of a working couple's life in a customized smart-home rental



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a long-standing operating model in place won't propel innovation. Instead, it's important for a company or brand to be open to changing long-held processes, be willing to test and learn through pilots on a small subset of properties, and understand that not every experiment will succeed.

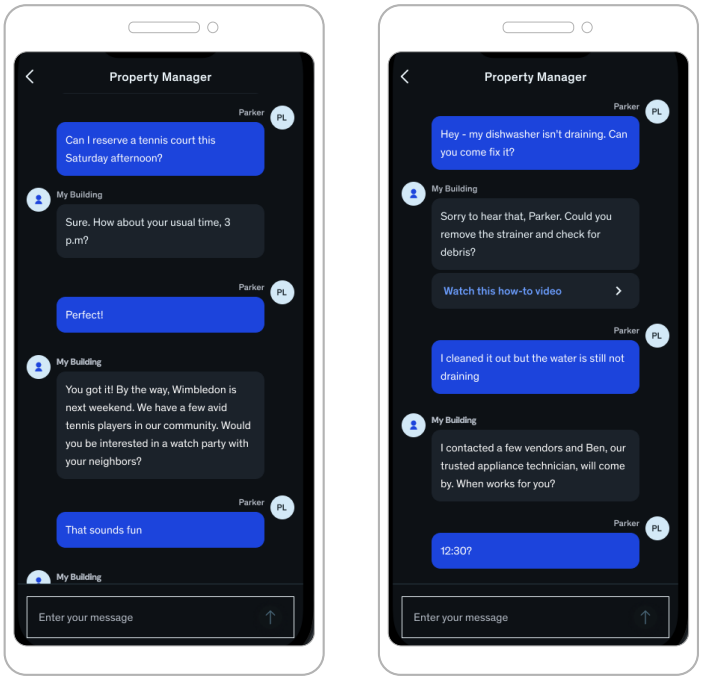
Tools may include the following:

- *Analytics-enabled services* can recognize and reward milestones (such as birthdays and anniversaries, or years of occupancy in the building) to optimize the customer experience.
- *AI-powered copilots* can improve prospective residents' experiences and free up frontline employees' time by empowering them with better information (Exhibit 4). AI-powered workflow tools can provide coaching and insights that help building teams make better decisions about everything from capital expenditures for new building features to better revenue management.
- *AI-enabled workload forecasting and dynamic scheduling models* can optimize labor levels based on seasonal demand, enabling intelligent labor forecasting and budgeting.
- *Intelligent, self-serve resident support portals* can answer frequently asked questions and enable digital workflows (including rent payments and maintenance request submissions).
- *Digitally enabled community activation,* delivered through a mobile app, enables residents to learn about and RSVP to events that help them feel connected to their neighbors.

Exhibit 4

A digitally enabled property manager can automate tenant communications.

Illustrated examples of tenant interactions with a virtual manager



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6. Define the governing brand architecture
Real estate companies can create their own brands or partner with established brands that already enjoy strong public recognition. Brand strategy decisions should be made after researching conversion, loyalty, pricing premiums, and retention. If there is a loyalty program, decide whether it relates to the specific building or to the parent brand. Creating brand families starts with deciding which of the following models is most beneficial:

— *Brand house.* All subbrands are logically associated with the parent brand, enabling strong network lifestyle recognition that is consistent across geographies. This approach is most effective when:

  • resident segment needs are almost identical

  • the brand contains and communicates all relevant dimensions and benefits

— *Endorsed model.* Subbrands resemble the parent brand, exhibiting some overlap in user segments, user needs, or product offerings. This is most effective when:

  • resident segments share few comparable needs

  • subbrand identities are loosely based on the parent brand

  • the parent brand imparts trust and credibility to the subbrands

— *House of brands.* This refers to a brand umbrella, in which sub-building brands have stronger recognition than the network parent brand. Each brand has a different user segment and brand ethos. This is most effective when:

  • each brand addresses a segment with unique needs

  • brands are perceived as most relevant to consumer segments when positioned individually

Incorporating automation can yield better service

Do airline customers crave service with a smile? A survey found they desired *less* face-to-face interaction. For example, 65 percent wanted touchless curb-to-cabin biometric checks, and 60 percent wanted digital passports, with data deleted after use.[1]

Answering the call for a more automated experience, one major airline drastically reduced service operations costs by introducing new digital touchpoints. Because they were less busy handling smaller, rote tasks, service staff could devote their time to resolving tricky issues. By creating a more seamless customer experience, the airline both lowered costs and increased customer satisfaction. Nearly three-quarters of customers reported preferring the new self-serve boarding process over the standard boarding procedure.[2]

There's an opportunity to apply established science from other industries to real estate. The travel industry's research into personalization, digital marketing, and digitally enabled customer service—elements that optimize experience and generate loyalty—translates well. Seventy-nine percent of residents[3] prefer to tour properties, renew leases, submit maintenance requests, and interact with management through self-service means—freeing up staff time for more value-added tasks.

[1] Henry Canaday, "Digital tech is transforming the airport customer experience," Aviation Week Network, September 29, 2023.
[2] Diane Miller, "The digitization of customer experience and why it needs to be on your priority list," SnapLogic, May 5, 2023.
[3] An exploratory research study: Customer experience and customer self-support, Higher Logic, April 19, 2024.

7. Be bold
Highly creative brands consistently outperform their peers, with 67 percent achieving above-average organic revenue growth. Building an engaging, high-performing brand is an agile exercise, and brands have to evolve to maintain relevance and meaning for the communities they serve.

8. Measure and focus on data
Bold experimentation is crucial but can only yield results when it's measured. Companies have to be able to quantify the impact of their experiments to know what worked, what didn't, and how to adjust. This requires investing in data, the bedrock of loyalty. Companies need data to understand their residents' habits, values, and behaviors. Data collection and synthesis tools include customer relationship management technologies, sensors that measure amenity use, social media listening tools, and surveys.

In the new world of customer experience, resident expectations are evolving. Residents live in a world where hotels, cars, fitness communities, and more are imbued with polished self-service, nuanced brand identities, and sophisticated loyalty programs. It's logical that they should want these same attributes in the places they call home. Now it's up to real estate owners and operators to recognize the call for change and to deliver it through branded moments that matter.

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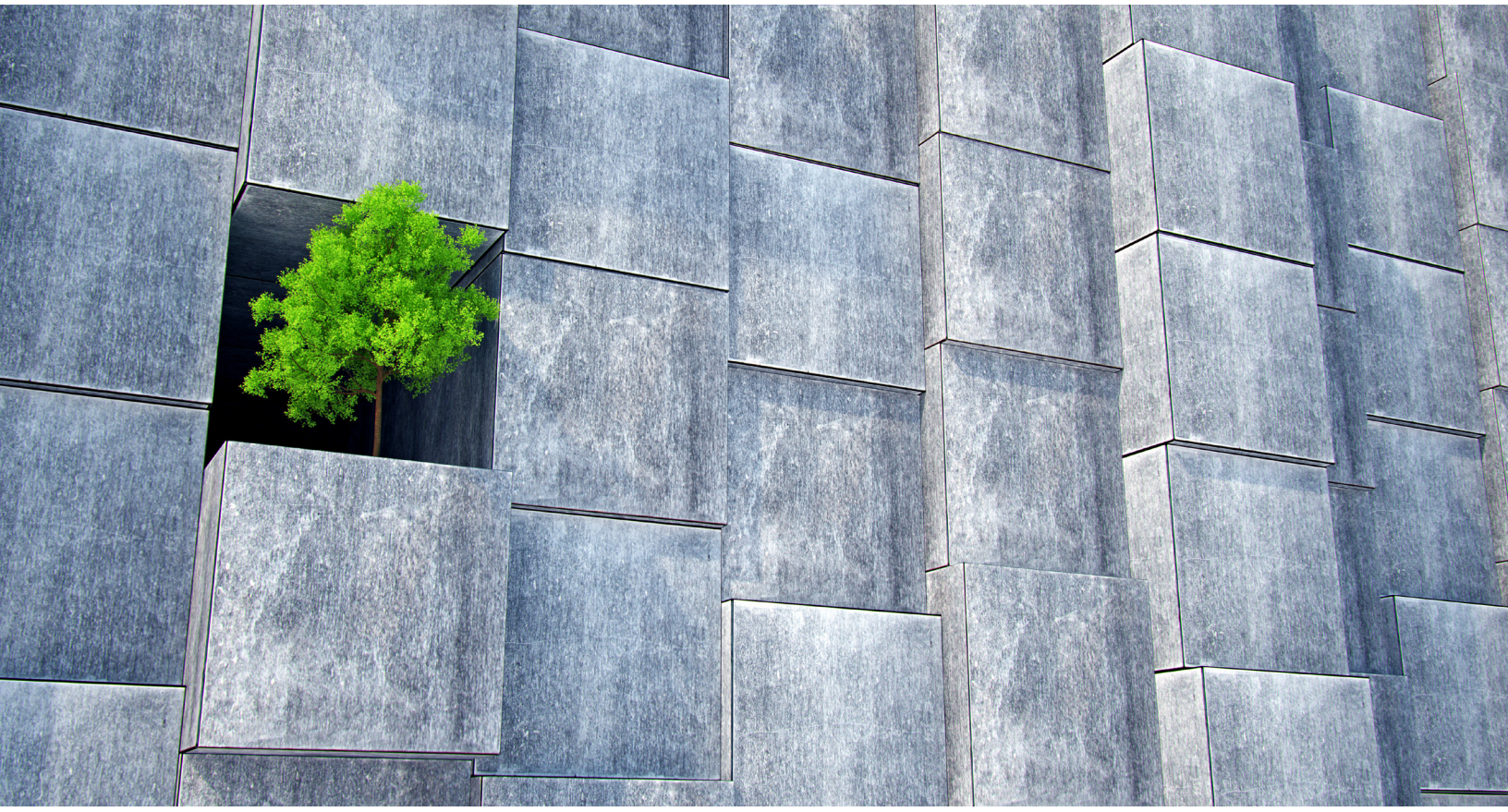
The authors wish to thank Corinne Beemer, Amanda Felberg, Ethan Henley, Bo Johns-Hennessy, Kelsey Muller, Dmitry Shatalin, and Yue Wu for their contributions to this article.

Seizing opportunities amid the agtech capital drought

Despite market slowdown and funding woes, some agriculture technology start-ups still retain high value. Here's how investors can identify and pursue these opportunities in time.

by John Levene, Roberto Uchoa de Paula, and Tom Brennan with Arnaud Dupuis and Romain Paniagua



As the agriculture technology (agtech) industry adapts to a new normal in fundraising—and a vastly different macroeconomic climate than in years past—investment opportunities are slowly starting to emerge. Instead of waiting on the sidelines for conditions to stabilize, strategic companies and financial investors can use this limited window of opportunity to make bold moves and gain a competitive advantage.

Over the past few years, the agtech industry has faced a major capital drought. Venture capital (VC) funding has declined by 60 percent since late 2021, due to broader market uncertainty and decreased risk appetite among investors.[1] Although the funding environment is showing signs of stabilization, the impact of the slowdown on agtech start-ups, in particular, was significant. We estimate that approximately $6 billion that was invested in 30 important agtech start-ups was lost in 2023 because of turnaround or distress situations.[2] And several companies could face a similar fate: in our analyses of 349 well-funded start-ups, we have found that at least 30 percent of them, which are raising $10 billion to $15 billion in aggregate capital, are running behind on their fundraising targets and will likely need a capital injection.[3]

Despite these headwinds, the long-term industry outlook remains promising. All the factors that made investment in agtech appealing in the past remain pertinent today: food security and sustainability concerns are top of mind for policy makers and consumers, and advancements in technology, particularly in digital and biotech, are helping agtech businesses become more profitable, productive, efficient, and environmentally friendly (see sidebar "An investor's perspective"). Moreover, even though several start-ups are facing financing challenges, they continue to demonstrate that they have strong intellectual properties (IPs) and talent, often alongside novel business models.

Tough times can present unique opportunities, and this holds true for the agtech industry. In our view, there are several different plays on the table for strategic companies and financial investors to consider in the current environment, ranging from bolt-on acquisitions to direct minority investments, as we will highlight in this article.

Impact of the capital drought

In 2022, we examined how a sharp drop-off in funding affected agtech start-ups after we witnessed rapid growth between 2012 and 2020.[4] The challenges persisted into 2023, with the sector experiencing a year-over-year decline of 30 percent in VC funding (Exhibit 1). The slowdown occurred against the backdrop of a broader retreat in overall VC investment, which fell by 50 percent over the same period.

There are several reasons why this is happening. Inflationary pressures have resulted in increased costs for essential resources such as energy, labor, and raw materials, creating sustained uncertainty about the long-term profitability and scaling potential of these start-ups and slowing down innovation. As a result, many start-ups are struggling with weak unit economics—a retreat from the "growth at all costs" business model—disappointing sales (for example, in plant-based protein), and long development cycles.

In this environment, institutional investors have become increasingly wary of expanding their private equity (PE) and VC exposure in agtech start-ups because of the fall in the equity value of their investments and lackluster performance. Higher interest rates have also made it costlier for them to provide funding for start-ups, while simultaneously increasing the risk-free rate of return.

[1] PitchBook data.
[2] McKinsey analysis of public announcements, as of June 2023.
[3] Analyses were done on a data set of 349 agtech start-ups from Europe, Israel, and the United States that had already received Series A funding of at least $30 million, according to public sources and McKinsey experts.
[4] Anjan Asthana, Tom Brennan, Dave Eickholt, and John Levene, "How agtech start-ups can survive a capital drought," McKinsey, November 10, 2022.

An investor's perspective

Advances in agriculture technology (agtech) are fueling a wave of innovation. One such example is cellular agriculture, which uses biotech to produce agricultural products such as meat, seafood, dairy, and eggs directly from cells and single-celled organisms. Amid a rising global population, alternative proteins, including lab-grown cultivated meat, are fast gaining in popularity as carbon-neutral food production strategies that can help improve food security.

McKinsey's John Levene spoke to Anthony Chow, cofounder of Agronomics, a London-listed venture capital firm focusing on cellular agriculture, about investor interest in emerging agtech and how companies are navigating the ongoing funding challenges.

McKinsey: What role do you believe cellular agriculture can play in the global transition to a net-zero economy? And how have investor profiles in the space evolved over the past few years?

Anthony Chow: An absolutely central role. It is the only technology with the potential to increase our food output while decreasing the resource intensity and greenhouse gas emissions associated with its production. We must face the reality that we simply cannot continue to feed today's population of eight billion people with current consumption patterns and production methods, let alone the additional two billion people who will be on the planet in the coming decades.

We made our first investment in cellular agriculture back in 2018. At that point, there were about 20 companies in the field and only $50 million had gone into the sector globally. The investors supporting the industry back then were mission-driven investors with a heavy focus on animal welfare. Since 2018, we have seen a transition to far more sophisticated institutional investors, including sovereign-wealth funds, financial actors, and strategic investors.

McKinsey: How has the ongoing slowdown in overall venture capital and agtech investment affected the sector?

Anthony Chow: The last 18 months have been extremely challenging, not just for the field of cellular agriculture, but for public and private funding markets alike. The funding rounds that have been the hardest to get done are those of material size (above $30 million), because this is where you need participation from sophisticated institutional investors. Lofty valuation expectations from founders have now come down. As a result, after summer 2023, we started to see the purse strings of significant investors loosen, with funding rounds of stronger companies coming together.

This renewed financial discipline for all companies with the cost of capital increasing is healthy and has made founders and management teams focus on what is really going to create value and allow these companies to raise their next funding rounds. But in most cases, it has removed the prospect of multi-hundred million dollar Series B and C funding rounds.

McKinsey: What are some of the most common challenges that cellular-agriculture companies are facing in the current environment?

Anthony Chow: We know that cellular agriculture as a technology works and that it is possible to produce proteins using this technology. The challenge for these companies is whether the technology can produce them at an industrial scale and at a price point that is ultimately equal to or cheaper than that of conventional production methods. This is not an insignificant challenge, and access to capital is currently constraining the industry.

At a more granular and scientific level, the performance of the cell lines is the biggest factor in unit economics for cultivated-meat companies. I'm generally talking about three important metrics: doubling time, the time it takes the cell populations to double; densities, the density that the cells can grow to in the bioreactors; and differentiation, the time it takes the stem cells to differentiate into the specialized somatic cells, muscle, and fat.

For precision fermentation[1] companies, the challenge is the growth rate of the organisms and the titer that these organisms can achieve in a given time frame. Once high titers have been achieved, the challenge is the recovery rate of downstream processing, which varies substantially between expression systems. But as is the case for both cultivated meat and position fermentation, doing things at a very large scale is going to make a dramatic difference to the unit economics of the final product.

McKinsey: How do you expect the market to change over the next six to 12 months?

Anthony Chow: Investors have already begun to adjust back to what was the normal, traditional market—following an era of record-low interest rates—where there is a cost of capital and greater clarity on the interest rate hiking cycle. I don't expect to see a return to an environment like 2021 for a very long time, if ever, but we are beginning to see larger funding rounds come together for the stronger companies in the field. The scheduled funding rounds, a further 18 to 24 months' worth of technical progress, and cost reduction, along with regulatory approvals and the opening of additional jurisdictions to cultivated meats and precision fermentation, should be more than sufficient to generate excitement, which will lead to further funding flowing into the sector.

Anthony Chow is cofounder of Agronomics.
John Levene is a partner in McKinsey's New Jersey office.

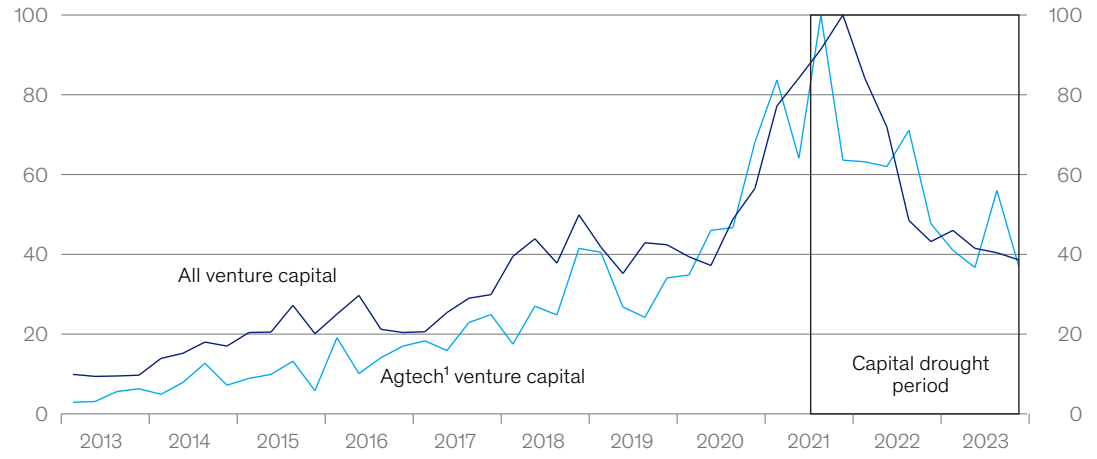
Comments and opinions expressed by interviewees are their own and do not represent or reflect the opinions, policies, or positions of McKinsey & Company or have its endorsement.

[1] A sustainable brewing technique used in the alternative-protein industry. For more, see "What is precision fermentation?" Eden Brew, September 26, 2023.

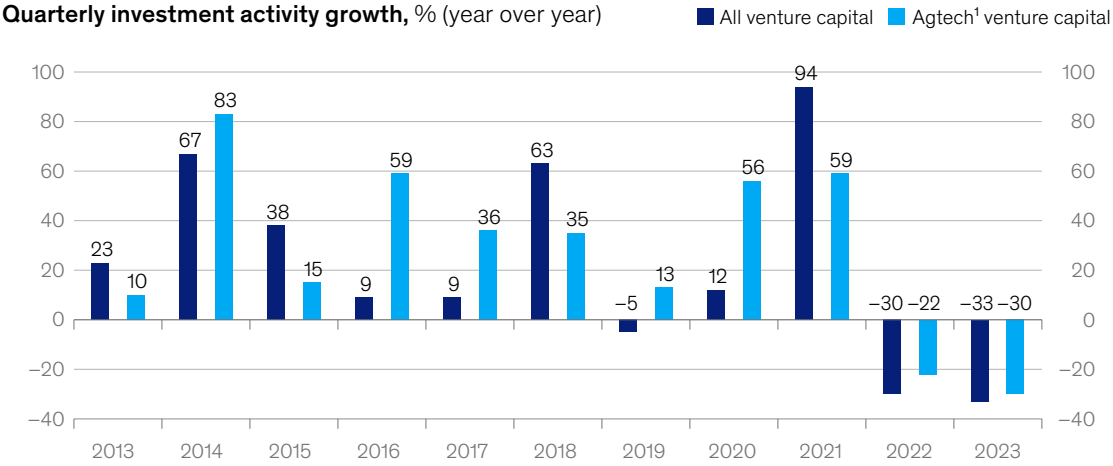
Exhibit 1

Venture capital funding in agriculture technology fell 30 percent in 2023.

Quarterly investment activity (normalized to maximum quarterly value observed), %



Quarterly investment activity growth, % (year over year)



[1] Agriculture technology; agtech companies are engaged in developing systems to automate, promote, and manage environmentally conscious farming.
Source: PitchBook

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Investors' expectations for agtech start-ups have shifted over time, too. When the going was good, investors focused on companies that demonstrated strong growth. However, in a more challenged macroenvironment, they have increased emphasis on positive cash flow generation.

This trend in private agtech funding is also being mirrored on the public side. While this data is often overlooked in the broader assessment of the VC funding environment, our composite analysis of 35 public companies in third quarter 2023 showed a decline in market cap of around 60 percent from the peak of first quarter 2021.[5]

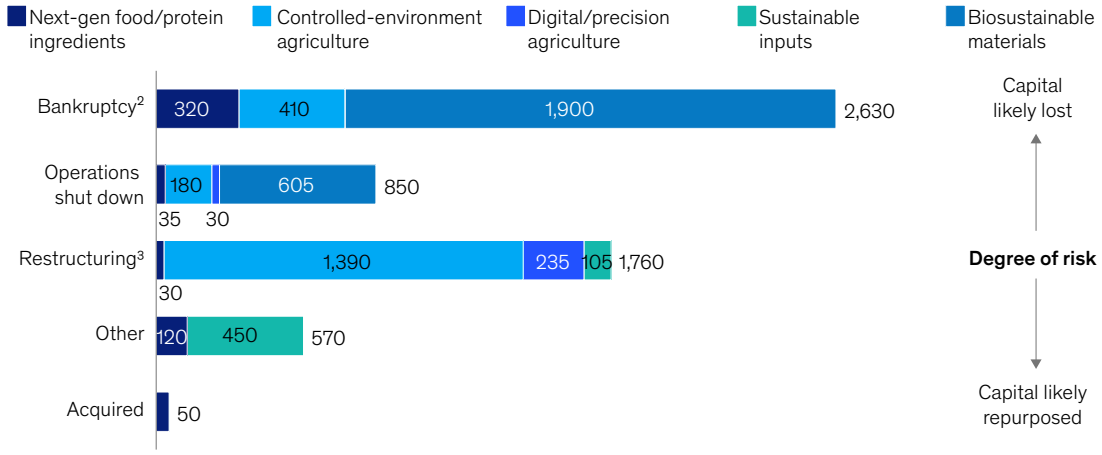
[5] McKinsey corporate performance diagnostic tool.

The impact of this capital drought has been significant. We estimate that approximately $6 billion that was invested in 30 important agtech start-ups was at risk, if not already lost, as of June 2023. There are several reasons for this, including bankruptcy announcements, shutdowns, restructuring, and acquisitions. All five agtech subsectors we analyzed (next-gen foods and alternative proteins, controlled-environment agriculture, digital and precision agriculture, biosustainable materials, and sustainable inputs) faced various challenges, ranging from layoffs to bankruptcies, in both pre-IPO and public agtech companies (Exhibit 2).

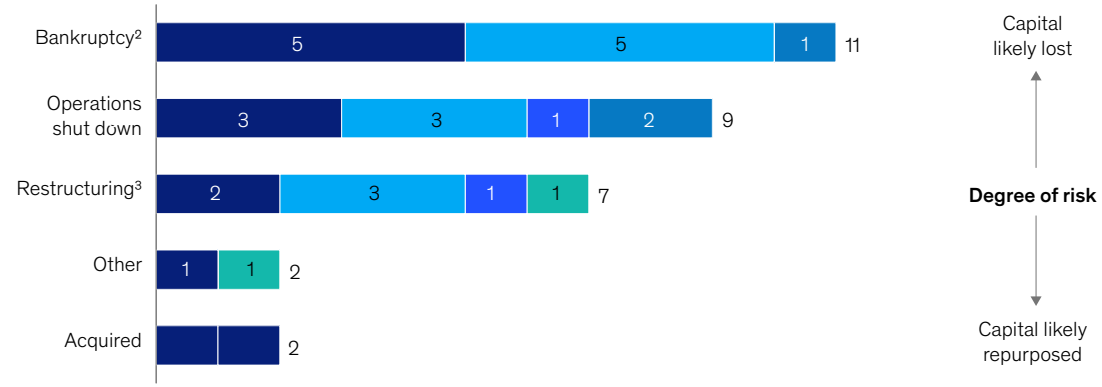
Exhibit 2

As a result of the agriculture technology capital drought, nearly $6 billion worth of investments are at risk of being lost.

Capital invested by start-ups across sectors, and the degree of risk to capital,[1] $ million (n = 31)



Number of start-ups across sectors, and the degree of risk to capital,[1] (n = 31)



[1]Companies analyzed on an 18-month rolling basis.
[2]Amyris bankruptcy accounts for $1.9 billion.
[3]Includes companies that went private or went into receivership with layoffs as only end result of capital lost.
Source: McKinsey analysis

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Beyond the impact in pure dollar terms, the loss of talent across these 30 companies totaled over 3,300 individuals. And there is still the risk that the mature IPs, technologies, and assets owned by these start-ups could be erased if they are not meaningfully redeployed.

To understand how many other agtech companies might be facing financing risk, we examined the elapsed time since the last funding rounds of 349 pre-IPO agtech start-ups and how it compared with the average duration between funding rounds over the past decade.

Notwithstanding the moves start-ups have taken to extend their runways, we believe this data provides an approximate indicator for the level of stress.

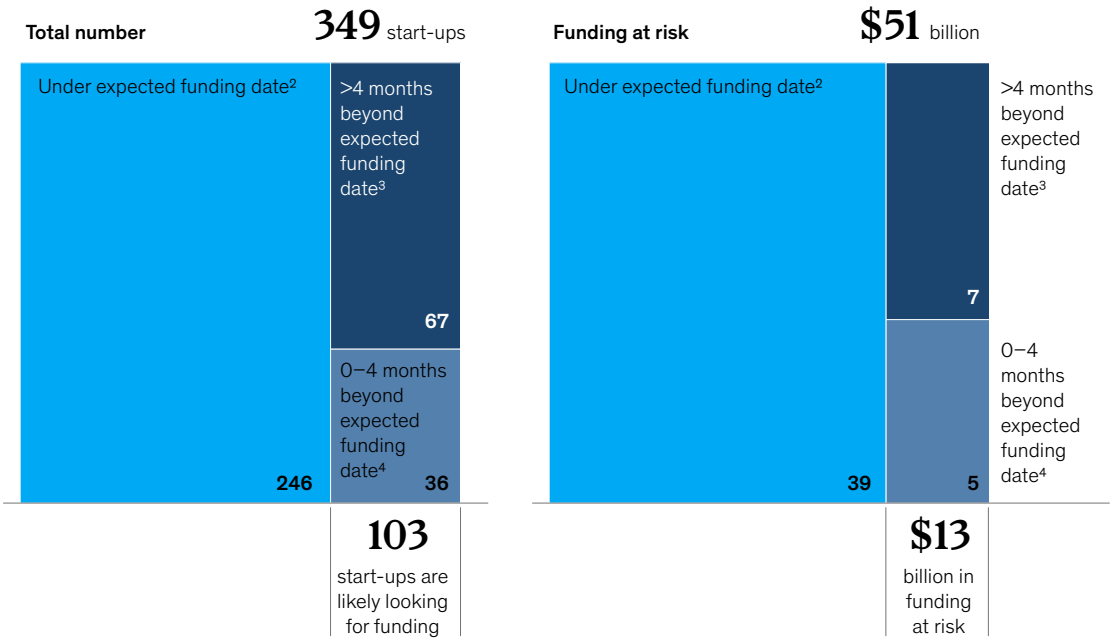
Based on this research, we estimate that 30 percent of these start-ups are seeking their next funding round and will likely need a capital injection soon to remain operational (Exhibit 3). The aggregated capital they raised is estimated at between $10 billion and $15 billion. Without further investment, this capital could be lost, along with the IPs and talent they have developed.

The hardest-hit subsectors could be next-gen foods and alternative proteins, digital and precision agriculture, and controlled-environment agriculture (Exhibit 4). Several start-ups in these subsectors have stretched their runways beyond initial expectations and are likely in need of additional funding.

Exhibit 3

Approximately 30 percent of start-ups are potentially in need of financing, with $10 billion to $15 billion in funding at stake.

Agriculture technology start-ups in scope that are beyond expected funding date (n = 351)[1]



[1]Including A+ and $30 million+ start-ups only.
[2]Start-ups categorized as having received funding in a time period less than the average duration to receive funding (calculating from June 30, 2023).
[3]Start-ups categorized as having received funding in a time period longer than 25% beyond the average duration to receive funding.
[4]Start-ups categorized as having received funding in a time period between the average duration to receive funding and longer than 25% beyond the average duration.

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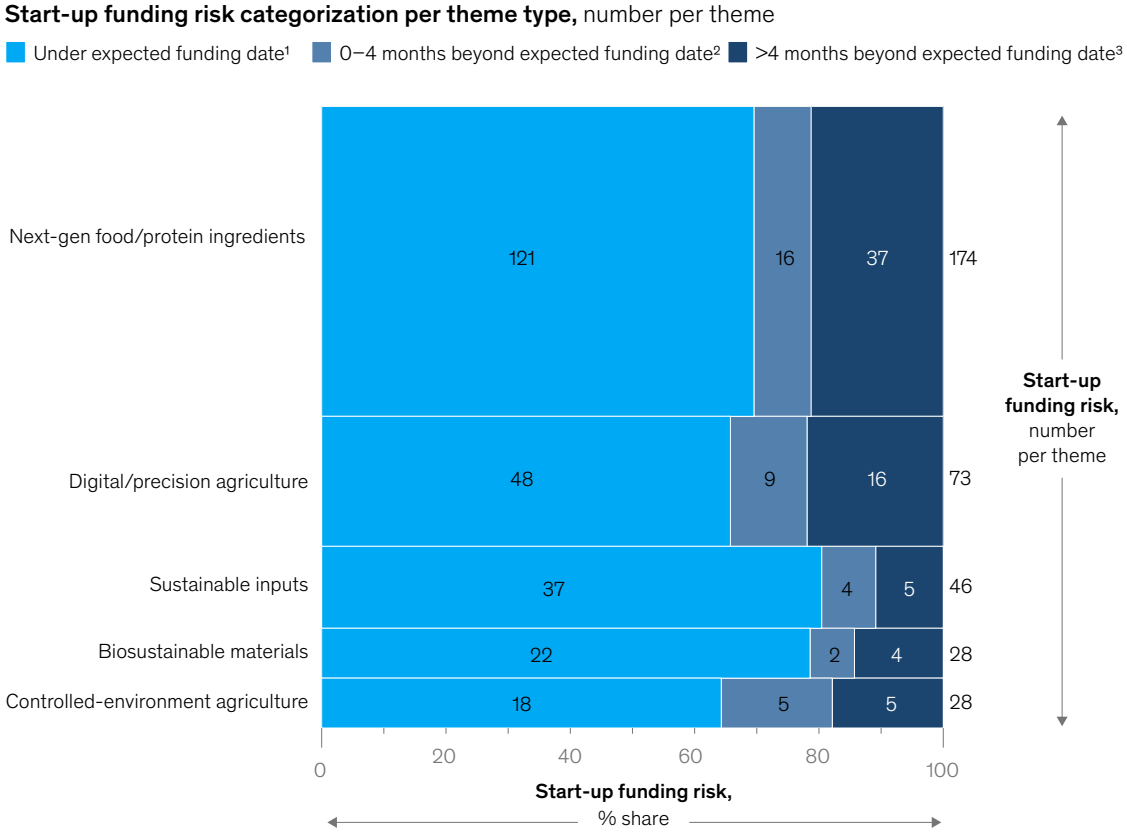
Exhibit 4

Next-generation food start-ups are the hardest hit by funding woes.

Start-up funding risk categorization per theme type, number per theme



[1]Start-ups categorized as having received funding in a time period less than the average duration to receive funding (calculating from June 30, 2023).
[2]Start-ups categorized as having received funding in a time period between the average duration to receive funding and longer than 25% beyond the average duration.
[3]Start-ups categorized as having received funding in a time period longer than 25% beyond the average duration to receive funding.
Source: PitchBook, Crunchbase, McKinsey analysis

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Reasons for optimism but a narrow window to act

These funding challenges and the potential loss of capital might prompt some to sound the death knell for the agtech industry, but in reality, its long-term outlook continues to look promising.

Let's start by examining the funding decline in historical context. When analyzed over a ten-year period, agtech funding continues to remain robust, despite ongoing challenges. Funding data also shows early signs of stabilization after the COVID-19-pandemic-induced peak in 2021: the $4.6 billion invested in agtech start-ups between first and third quarters 2023 is, in fact, slightly higher than the $4.4 billion invested during the same period in 2020.[6] This suggests that funding hasn't dried up entirely for agtech start-ups. While aggregate funding is indeed lower than the 2021 peak, start-ups with growth potential are still able to attract investors.

[6] PitchBook data.

Moreover, despite current macroeconomic challenges, there are several tailwinds powering the long-term growth of the sector. The agriculture industry benefits from digitization and the adoption of advanced technologies, including robotics, biotech, and generative AI. Potential end users also remain motivated to explore these new technologies, particularly as they become more affordable. At the same time, food security is a top geopolitical priority. With the agriculture industry responsible for over a quarter of emissions, sustainability remains a major problem.[7] Upstream, we see bigger farms planning to increase their use of sustainable, digital, and precision agtech solutions.[8] And further downstream, there is fast-growing adoption of flexitarian (semi-vegetarian) diets, especially among the more affluent and urban populations.[9]

Given these long-term growth factors, now is the time to play offense. In our view, incumbents and investors have a short window to act and provide financial or operational support to the start-ups that face funding challenges, while their capital still retains high value. Doing so proactively, while the IPs are still fresh and top talent is still around, can help investors retain and solidify the long-term value of these start-ups.

Strategies for investors and incumbents

Despite numerous challenges, including crop input inventory issues, incumbents have navigated industry disruptions and are therefore in a strong financial position to capitalize on investment opportunities. Based on our analysis, free cash flow[10] among large agrifood incumbents, for example—especially in the growers, inputs, and food ingredient categories—grew at a CAGR of 10 percent between 2019 and 2022, which suggests they have capital available to deploy.

Meanwhile, investors, particularly those with cleantech agendas, still have considerable funds at their disposal. Climate tech investment in PE increased by 100 percent to $3 billion between 2021 and 2022; investment increased in VC by 10 percent to $10 billion during the same period.[11] The investor pool is also expanding: in recent years, there has been an influx of non-VC investors (such as growth equity and infrastructure investors) in the climate tech sector, which partially overlaps with the agrifood industry.

[7] *Reducing agriculture emissions through improved farming practices*, McKinsey, May 6, 2020.
[8] McKinsey Global Farmer Insights Survey, 2022.
[9] McKinsey Global Protein Survey, 2022.
[10] Free cash flow signals a company's ability to pay down debt, pay dividends, buy back stock, and facilitate the growth of the business.
[11] "New dry powder for a new climate," CTVC, November 11, 2022.

With the agriculture industry responsible for over a quarter of emissions, sustainability remains a major problem.

Incumbents and investors have a short window to act and provide financial or operational support to the start-ups that face funding challenges, while their capital still retains high value.

Below are four potential approaches that provide an array of risk/return trade-offs while addressing the underlying challenges at these start-ups:

— *Asserting operational discipline.* The sudden and stark change in the funding environment has been a wake-up call for start-ups. As start-ups recalibrate their strategies, traditional PE investors can use this period to instill greater focus and discipline (ideally tied to tangible performance milestones, such as unit economics targets or enrolled acreage).

— *Distressed investment.* We often observe that start-ups, especially in digital and precision agriculture, have compelling products but struggle with monetization because of user behavior or value chain challenges. There are instances when companies have run out of runway, but it is possible to relatively quickly fine-tune the offering and pivot the business and pricing models to create a quick-win opportunity.

— *Roll-up plays.* Many agtech start-ups face issues regarding product competitiveness: products may lack in performance or cost competitiveness, leading to lower market traction. Alternative-protein companies, for example, must address multiple challenges at once: taste, affordability, and commercialization (including branding and distribution). A sequence of acquisitions of companies that have checked one or two (but not all) of the boxes could create a whole greater than the sum of its parts.

— *Partnerships.* Recent interest rate hikes (and higher cost of capital) have challenged many business cases, particularly in areas with long development timelines, such as sustainable inputs and biomaterials. By providing cash injections and offtake agreements, strategic partners can prolong the runway and derisk their investments.

Strategies for start-ups

On their part, agtech start-ups can also make strategic and operational changes to their business models to navigate these challenging times. While the tailwinds discussed in this article should give them hope, they must also recognize and respond to the return to normalcy in the funding environment.

The reduction of burn rates remains paramount. We have seen different companies adopt this focus in line with their own industry contexts. Sustainable-inputs companies, for instance, are weighing the breadth of their R&D pipelines, recognizing that it is possible to "prove the platform" with a smaller number of new products than they may ultimately be capable of producing. Other options include the use of partnerships or a future owner's own sales representatives to tap into new geographies. Meanwhile, established (but nonstrategic) business lines can be monetized through divestitures or licensing arrangements to bring in capital.

Start-ups can also look into whether vertical integration is a "must do" to commercially derisk the business or a "nice to have." In the food and ingredients space, for example, we have observed a narrowing of business models, with some companies curtailing B2C food product ventures to focus purely on B2B ingredient plays.

The agtech industry remains as relevant as ever. While the uncertain global investment climate has made investors more cautious about their next moves, seizing innovative opportunities today may be essential to unlocking growth.

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The authors wish to thank David Quigley, Kiera O'Farrell, and Maya Schushan Orgad for their contributions to this article.

Five considerations for software private equity in 2024

A new wave of software investing is on the horizon as private equity looks to create value through software portfolio companies.

by Alfonso Pulido and Vish Narayanan
with Darren Handoko, Kent Santin, and Varsha Verma

In the past five years of software investing, a volatile macroenvironment has created an unprecedented series of ebbs and flows. A period of breakneck intensity and investment was followed by a few challenging years. Now, investors are reflecting on the past and developing a more nuanced—and ultimately optimistic—view of software investment. In today's environment, a significant volume of dry powder is still available, chief information officers (CIOs) have reopened spending, and rebalanced valuations have led investors to reengage on potential transactions.

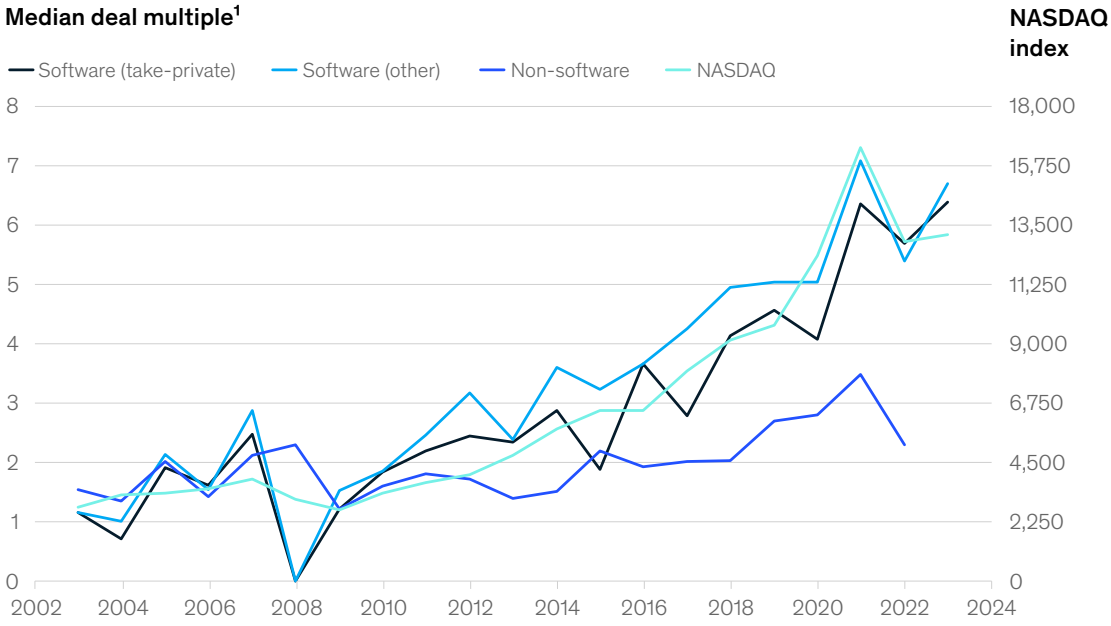
We have identified five key considerations to keep in mind as software investors prepare to engage with this new set of circumstances.

1. The slowdown of private markets in software is an opportunity for investors

Twenty years of continued multiples expansion is slowing down, with private equity multiples in software dropping significantly after years of steady growth (Exhibit 1). These factors, paired with a challenging deal environment and previously unrelenting valuations, have let dry powder pile up.

Exhibit 1

Software multiples have expanded over the past 20 years—until now.



Note: Software excludes 2008 deals due to low quantity.
[1]Multiple shown is the median enterprise-value-to-revenue multiple (EV/R), gathered from the PitchBook data set.
Source: NASDAQ; PitchBook data on completed software private equity deals greater than $100 million, Jan 2003 to Oct 2023, accessed January 30, 2024; McKinsey analysis

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2. Generative AI is driving waves of early disruption across software segments

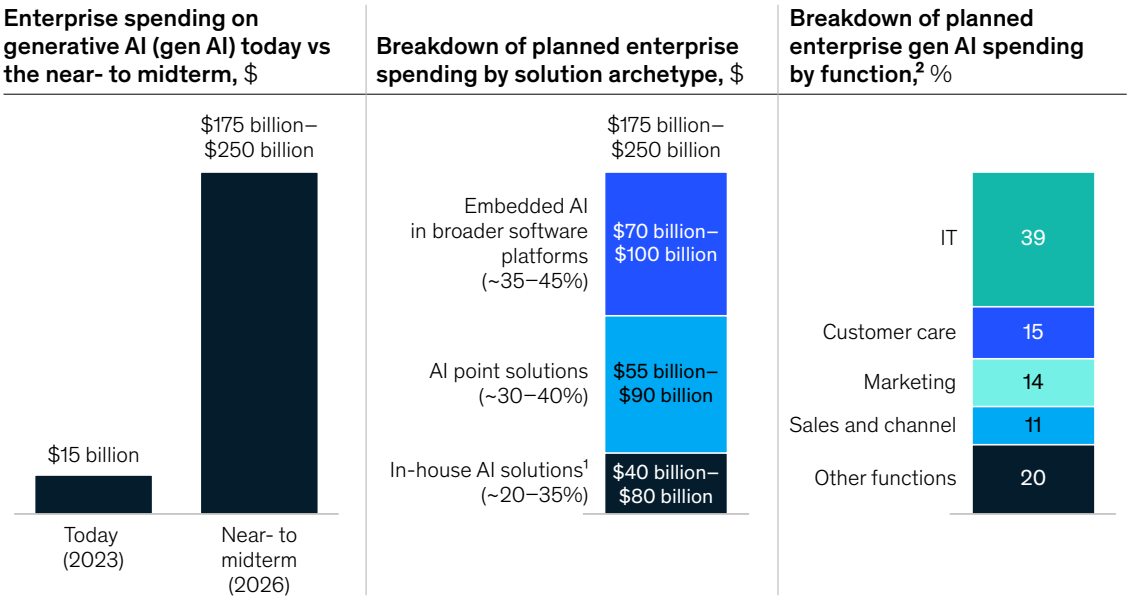
Generative AI (gen AI) continues to be seen as a transformative factor in software, enabling both disruption and innovation, with an estimated $250 billion of potential spending on gen AI applications, according to McKinsey analysis (Exhibit 2). In the near term, traction will affect certain key domains, primarily high-impact software categories. Sales and service technologies, for example, are experiencing a near-term valuation boost driven by an active market for new requests for proposal (RFPs).

3. Software buyers expect to increase spending—with caveats

Overall, CIOs are expected to continue to spend on software, accelerated by an increased dependence on and use of software to realize gains in efficiency (Exhibit 3). Vendor consolidation should remain the norm, except in areas with large amounts of innovation, such as data.

Exhibit 2

Enterprises could spend $165 billion to $270 billion across three generative AI archetypes.



Note: Figures do not sum to 100%, because of rounding.
[1]40% is put toward software spending, and 60% is put toward other labor or business functions.
[2]Leading use cases for each function are as follows: IT: assisted code creation, testing automation, and automatic documentation; customer care: virtual chatbot agent, call transcript analysis, and customer care representative copilot; marketing: mass collateral creation and customer segmentation; sales and channel: lead scoring models and customer profile creation; other functions: self-serve HR chatbots, fraud detection, and internal auditing.
Source: McKinsey Gen AI CIO Survey (n = 250)

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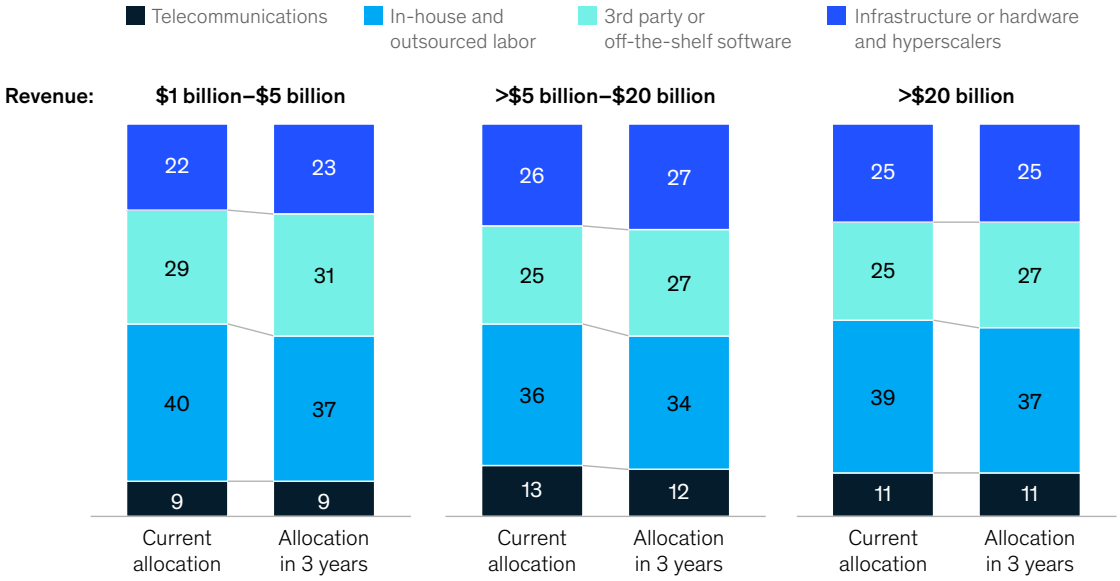
Exhibit 3

Chief information officers expect to proactively shift spending from labor to third-party or off-the-shelf software over the next three years.

Current and projected budget allocation by category, % of annual budget[1]



[1]Question: How does your annual budget break down into the following categories? Current allocation vs allocation 3 years from now.
Source: McKinsey CIO Survey 2023 (n = 76)

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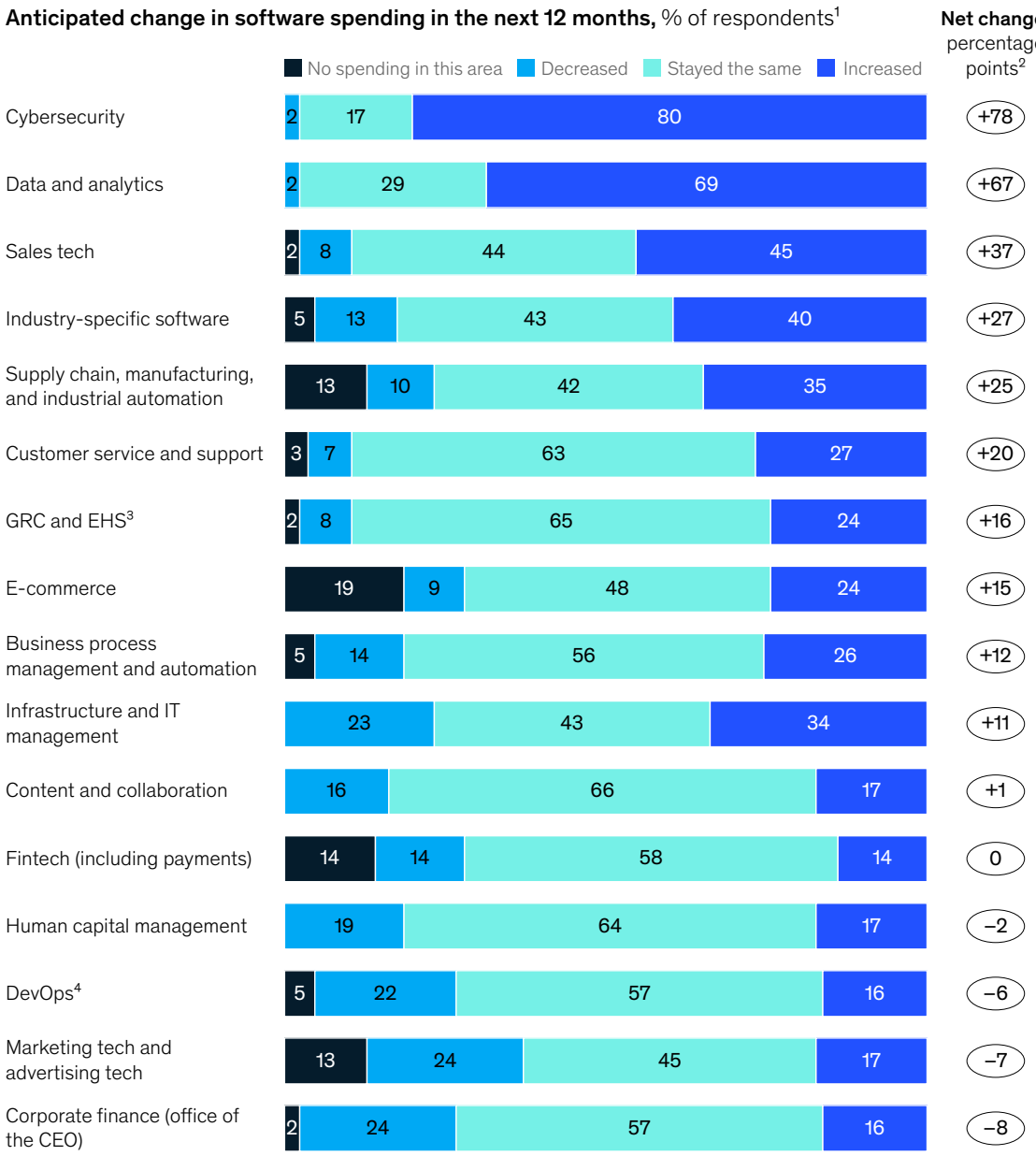
That being said, spending will likely not be even across software categories (Exhibit 4). According to data from McKinsey's 2023 CIO Survey, spending in cybersecurity and data and analytics will likely increase as companies persist in developing their gen AI capabilities while continuing to secure their application and infrastructure stacks. The gen AI movement has also created positive spending expectations in categories in which gen AI use cases are anticipated to help businesses realize incremental results, according to McKinsey survey data. This is particularly true in sales, supply chain, customer service, and industry-specific applications. Meanwhile, spending on human capital management and finance is expected to remain more stagnant.

Exhibit 4

Over the next 12 months, chief information officers anticipate increasing spending in several categories, consistent with their strategic priorities.



Note: Figures may not sum to 100%, because of rounding.
[1]Question: How do you expect your spending on software to change in the next 12 months in each of the following categories?
[2]Calculated as % of respondents increasing spending minus % of respondents decreasing spending.
[3]Governance, risk, and compliance; environment, health, and safety.
[4]Software development and IT operations.
Source: McKinsey CIO Survey 2023 (n = 86)

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4. Investors are rethinking their software investing approach

A slow 2023 delayed capital deployment, leading to accelerated sales processes for "long-in-tooth" hold periods (Exhibit 5). Continued fragmentation is expected within certain domains (for example, data) that will create headroom for thematic investments, with investors also exploring long-term bets, carve-outs, and take-privates.

5. The last mile has high potential for value creation for software companies

Software companies contemplating exiting in the next 12 to 36 months could consider proactively implementing improvement initiatives. There is a wide disparity between top and average performers in realized value creation for software companies, with some companies creating a five- to tenfold increase in enterprise value (Exhibit 6). This is mostly being accomplished through targeted revenue, M&A, and operational improvements (Exhibit 7).

Exhibit 5

Software investors are exploring a few routes to deploy capital, setting the stage for the deployment of dry powder in 2024.

A) Opportunistic	B) Strategic *(domain-centric)*	C) Thematic	D) Structural
More than 500 larger assets that last transacted before 2020 are evoking interest from buyers looking to shape the next horizon of value creation under new ownership.	Investors are looking at categories of software where they can add value based on expertise or experience—or where they can play into attractive market characteristics.	Investors are exploring assets tied to multiyear secular tailwinds, investing early, and riding the next wave of growth from the market.	Take-privates and corporate carve-outs of software companies could potentially increase, resetting the trajectory of underperforming assets.

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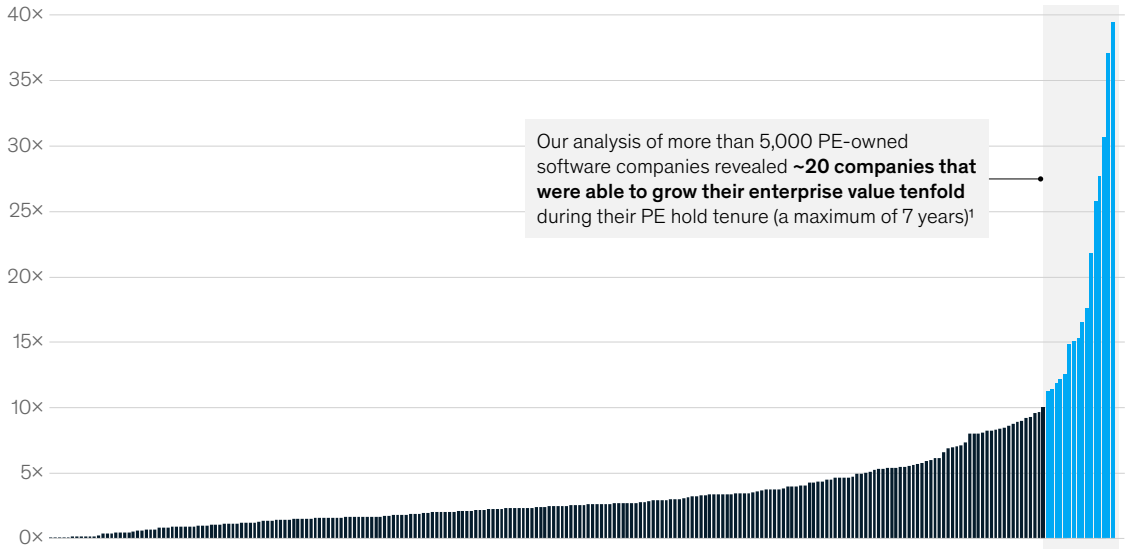
There is a wide disparity between top and average performers in realized value creation for software companies.

Exhibit 6

Enterprise values for some companies grew by ten times or more during their private equity holding period.

Exit and entry enterprise value (EV) change for private equity (PE)–owned software companies



[1]Companies considered for analysis included those with revenue >$50 million and entry EV >$150 million. Companies must have transacted twice within the past 10 years.
Source: PitchBook; McKinsey analysis

McKinsey & Company

From our conversations with more than 100 investors and their portfolio companies in 2024, we are seeing enthusiasm for and commitment to applying these five engines of software value creation. With that said, investors and software companies are considering a few levers to be disproportionate priorities in 2024: pricing and packaging, go-to-market effectiveness (including the rejuvenation of new logos, renewals, sales force coverage, and channel strategy), cloud "FinOps" to tackle the complexity of cloud adoption, R&D effectiveness and productivity (in particular, by extending current initiatives with the infusion of gen AI), and M&A.

Exhibit 7

We identified 12 consistent practices across companies that were able to increase their enterprise value tenfold during their private equity hold tenure.

Value creation lever	Value creation initiatives	Companies surveyed with an initiative in this category, %	Most relevant period Acquisition – Exit
Revenue engine: Deliver immediate, efficient top-line growth	**Focus on data-driven revenue optimization:** pricing, go-to-market segmentation, etc	86	
	Centralize sales capabilities to drive scale	57	
	Double down on a **proactive channel strategy**	29	
Product engine: Enhance developer velocity, and optimize product strategy	Accelerate productivity through **better business and product alignment**	71	
	Scale R&D with an enhanced **outsourcing and offshoring** program	57	
Foundation engine: Optimize decision making and support, and enhance talent organization	**Concentrate on analytics-driven efficiency:** focused efforts in high-cost areas	71	
	Streamline the operating model: fix the sales, product, and service offerings	86	
	Rejuvenate the top team: refresh of senior management	57	
	Build an enhanced **top-talent retention** program	71	
M&A engine: Enhance speed and success rate of acquisitions	**Employ a programmatic M&A strategy:** expand capabilities in the core and adjacencies	100	
	Develop a robust, **disciplined integration playbook**	57	
New-business building engine: Grow total addressable market	Establish **"new businesses"** (a new product, new geography, etc) to create an expansion story for the next owner	86	

Source: PitchBook; McKinsey analysis

McKinsey & Company

Alfonso Pulido is a senior partner in McKinsey's Bay Area office, where **Darren Handoko** is a consultant and **Varsha Verma** is an associate partner; **Vish Narayanan**, who leads McKinsey's software private equity work, is a partner in the New York office; and **Kent Santin** is an associate partner in the Seattle office.

The authors wish to thank Joshan Abraham and Tejas Shah for their contributions to this article.

A force for good: Japan's private equity opportunity

Japanese private equity is a growing presence in the financial landscape, and private equity firms can help Japanese companies fulfill their potential.

by Clay Bischoff and Daisuke Nozaki
with Seiji Yoshikawa and Yuri Sato

On the cusp of breakout growth, the Japanese private equity (PE) industry is an object lesson in the art of perseverance. After a long buildup, the industry has acquired the capabilities and competitive edge required to play a more prominent role in Japan's financial landscape. But to complete the journey, industry participants need to take some final critical steps.

The private equity industry has faced several structural headwinds in its attempts to scale in Japan. These include historically lower levels of M&A and a cultural context in which businesses are often held by families or in tighter ownership structures. But that is starting to change, as shown by the recent $15 billion PE buyout of industrial giant Toshiba, one of the largest global PE deals in the past five years. To build on that foundation, the industry can play an important role—fostering understanding of the benefits of PE, promoting the interests of shareholders, and attracting new deals.

What has put Japanese PE on a more positive trajectory? First, higher volumes of capital are earmarked for longer-term risk-taking. In addition, the talent pool is expanding, enabling firms to engage more effectively with opportunities. Third, there is a sharpening focus on shareholder value, alongside the interests of managers and employees. Moreover, amid generally subdued public-market performance, more financial-market professionals and policy makers see PE investment as a way to enhance return on capital and boost labor productivity and competitiveness.

While recent evidence suggests the PE industry in Japan is headed in a positive direction, there's potential for further progress. In this paper, we discuss how new approaches to deal with sourcing, storytelling, and value creation could reinforce the case for PE and lay the groundwork for a successful expansion of the asset class.

Glass half full

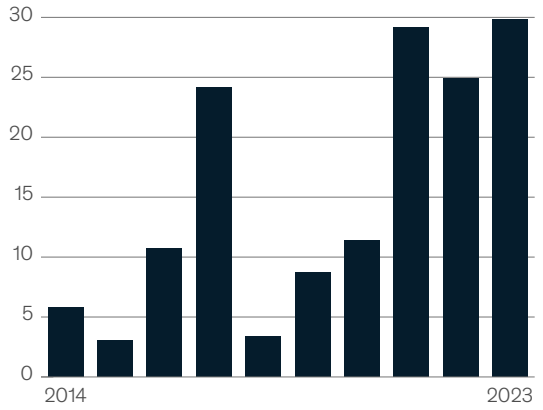
From a glass-half-full perspective, the Japanese PE industry is riding the crest of a wave. The years 2021 and 2022 were the biggest ever in terms of deal activity, and momentum continued into 2023, with several global PE and sovereign wealth funds entering the market (Exhibit 1). Given the recent increase in valuations, companies are more willing to consider acquisitions by PE funds, especially founder-owned companies looking for exit opportunities. Moreover, considering Japan's low-interest-rate situation, valuations for Japanese stocks remain attractive, even after the recent price appreciation, suggesting buying opportunities abound for PE funds. The increase of activist campaigns in Japan has also influenced the market. More companies are actively considering restructuring, leading to additional carve-out opportunities. Hostile takeovers may also increase, as companies place more emphasis on shareholder value. Companies may seriously consider private equity bids, unsolicited or otherwise, if selling a subsidiary would improve their capital efficiency. This may increase the chances of PE firms becoming a white knight and winning deals.

More financial-market professionals view Japanese private equity investment as an opportunity to enhance return on capital.

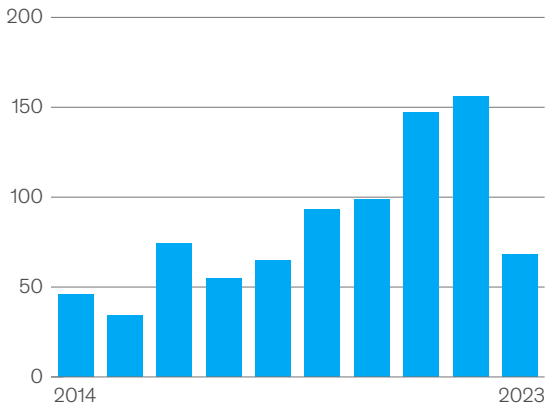
Exhibit 1

Japan's private equity transaction value has grown substantially in the past three years.

Annual value of private equity deals, Japan,[1]
$ billion



Number of disclosed private equity deals valued over $10 million, Japan[1]



[1]Includes deals with announced value more than $10 million and nonclosed, definitive-agreement status deals. Excludes real estate, real estate investment trust industry deals, and deals with investor-type sovereign wealth funds. Data for 2023 as of July 31.
Source: *AVCJ* (*Asian Venture Capital Journal*) database

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Conversely, from a glass-half-empty perspective, the picture looks a little different, with the market still some distance from reaching its potential. The number of large PE exits remains low (there have been only nine deals with an exit value higher than $1 billion since 2010, compared with 464 in the United States). In addition, transactions have tended to focus on subsidiary sales or carve-outs of noncore assets. Of the ten closed private equity deals worth more than ¥100 billion ($670 million) since 2020, six fit this description. This suggests significant potential for other deal types, including acquisitions of independent publicly traded and privately held companies. Furthermore, there are few examples of successful large transformations under PE ownership. In light of these dynamics, the industry has a tremendous future ahead.

Looking to the next generation of PE investment in Japan, the most successful international and domestic firms will seek to create an investment process that fully reflects local conditions. They will also bring a clarity of vision to convert doubters and, of course, generate reliably convincing results. We believe this quality of execution will reflect four strategic priorities:

— deploying a thematic investment approach to pursue attractive companies, particularly publicly traded businesses in need of new capital, ideas, and expertise

— sharpening the narrative for influential stakeholders in Japan's corporate ecosystem

— continuing to build out a holistic value creation playbook customized for Japan

— pursuing investment opportunities in growth-stage companies

Here we examine each of these priorities and gather examples of how leading players are shaping their strategies and capabilities to take advantage.

1. Deploy a thematic investment approach to pursue attractive companies

To create win–win deal opportunities, PE funds need to adopt more thematic approaches, developing points of view on industries aligned to structural economic tailwinds and then working to build relationships with relevant companies. McKinsey analysis shows that Japan PE transactions from 2010 to 2023 were more oriented toward retail, consumer, and industrial sectors than those in the United States and Europe. There was less focus on typically higher-growth sectors such as technology, media, and healthcare, which are often attractive to PE in other geographies (Exhibit 2).

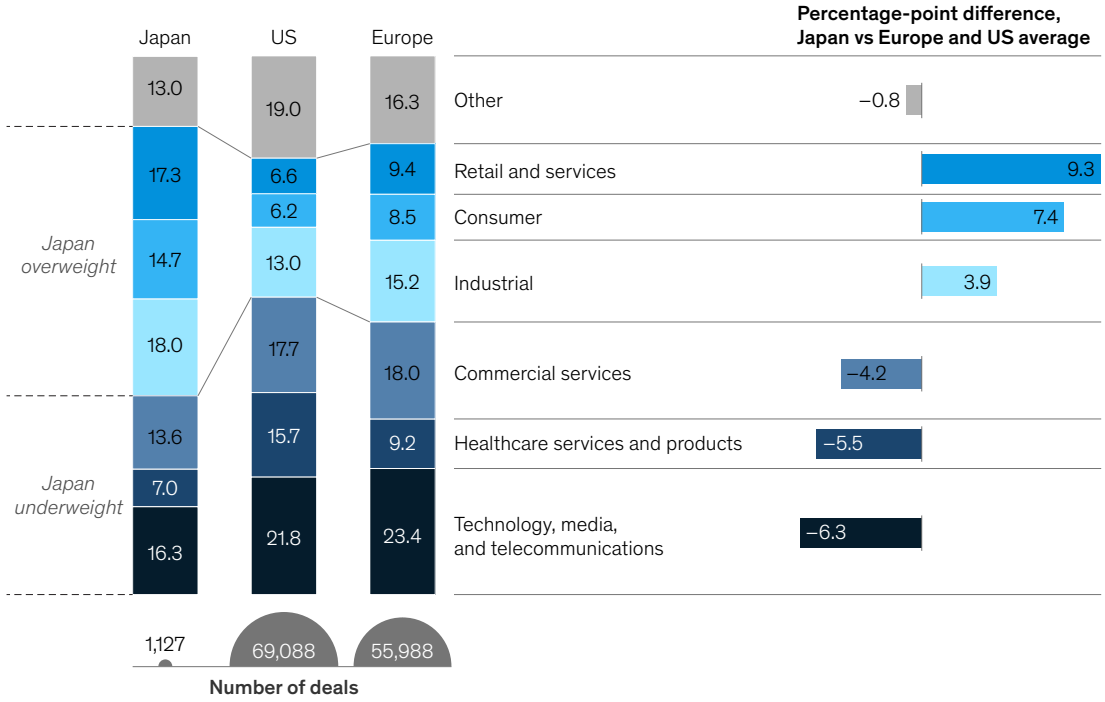
It may be that a narrow industry scope has limited the growth of PE in Japan. In fact, public companies in the technology, media, and healthcare sectors generated the best total shareholder returns (TSR) during the 2010–23 period, suggesting PE firms would have been better served in those sectors (Exhibit 3). One exception in terms of activity was IT hardware, where there were several deals. However, in general, there is room to increase capital allocation to the most attractive industry verticals.

Private equity may also find opportunities in public-to-private deals, particularly where there are companies with solid fundamentals that would benefit from capital, expertise, and incentives. In the public markets, there are certainly many companies with relatively stagnant levels of performance. Among 1,949 companies listed on the Tokyo Stock Exchange, only 22 percent achieved more than 5 percent annual TSR growth over the past five years (2017–22), McKinsey research shows.[1]

Exhibit 2

Japan private equity transaction activity lags in high-growth sectors.

Completed private equity deals by investment sector, 2010–23,[1] %



[1]As of the end of June 2023.
Source: PitchBook data

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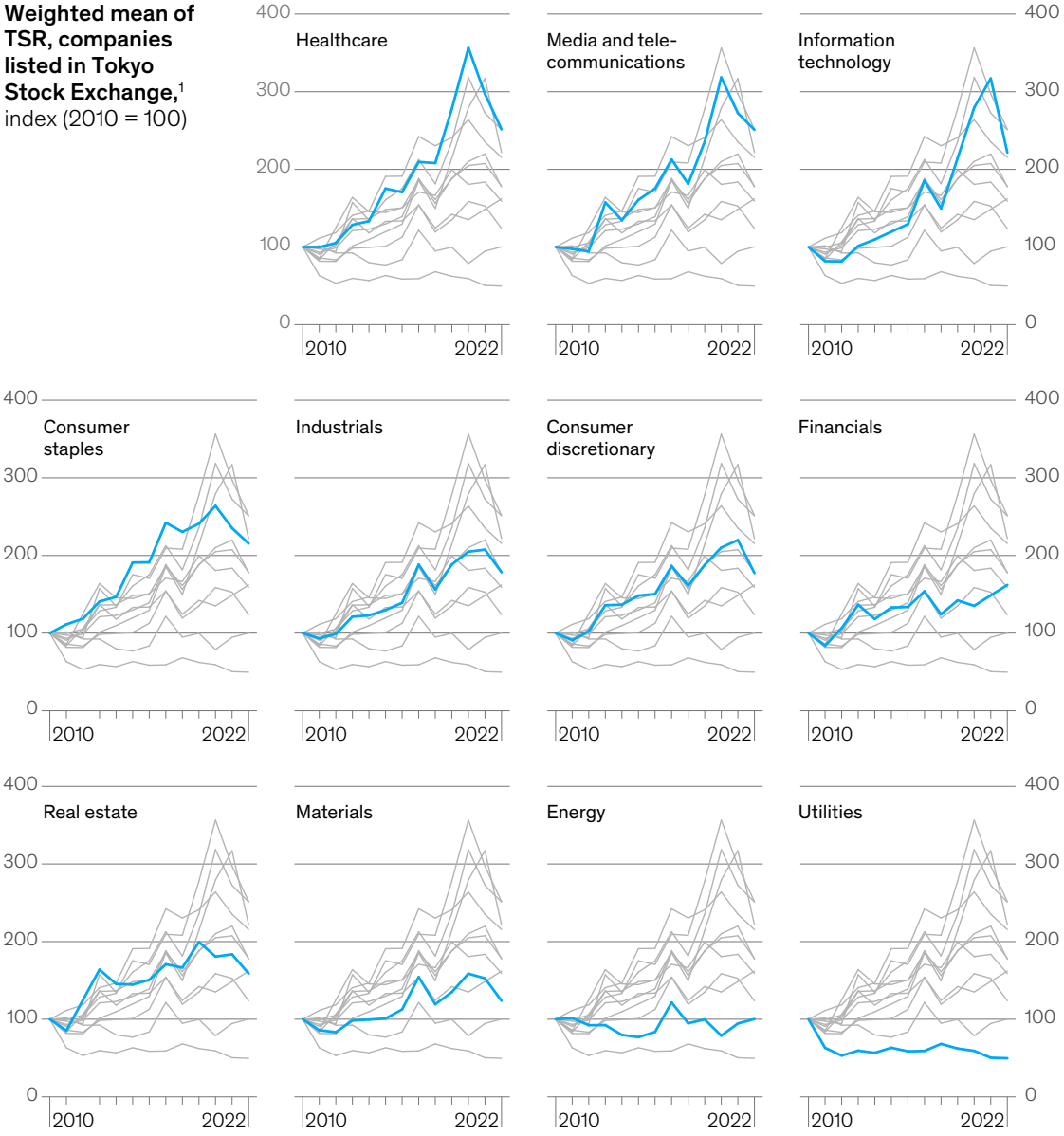
Exhibit 3

Healthcare, media and telecommunications, and IT have yielded top returns.

Weighted mean of TSR, companies listed in Tokyo Stock Exchange,[1] index (2010 = 100)



[1]Performance may also reflect business outside of Japan.
Source: S&P Global; McKinsey analysis

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For many Japanese companies, management and business reforms to improve competitiveness can be a key unlock for value creation. Take-private deals may be an enabling step, which we describe in more depth below.

2. Sharpen the narrative for influential stakeholders

PE firms in Japan have an opportunity to tell better stories to their stakeholders. A key focus should be to highlight the potential for upward mobility and financial rewards for employees of PE-owned businesses, playing into a cultural context highly focused on status and prestige. It would also make sense to accentuate the potential role PE firms can play to improve overall capital allocation and productivity:

Boosting employee motivation and productivity through financial rewards. Employees in Japan are increasingly adopting a mindset focused on upward mobility and financial rewards. This is reflected in job switch rates, which have accelerated in the wake of the pandemic. The proportion of annual switches was 7.6 percent in 2022, compared with 3.7 percent in 2016. Primary reasons cited include low salary (13 percent) and human relations (9 percent).

Historically, employee engagement in Japan was among the lowest in the world.[2] PE-owned companies that address this issue have an opportunity to develop a powerful alternative proposition to drive performance. In fact, a select cohort of Japanese companies with "high" levels of employee engagement saw their stock prices rise by 65 percent over a five-month period, while companies with "low" levels of engagement saw only 15 percent gains, according to one survey.[3] Among the numerous levers investors can use to improve employee motivation are modernizing performance evaluation systems to create clear policies on merit-based promotion and distributing equity to key performers.

Regulatory emphasis on capital efficiency. The Tokyo Stock Exchange rules include a provision that requires listed companies to maintain mandated price-to-book (P/B) ratios, with delisting threatened if they fail to comply. In a similar vein, Japan's Ministry of Economy, Trade and Industry (METI) has published a report identifying improvement drivers, including capital efficiency and growth potential. METI provides case studies of foreign investment in Japanese companies and highlights the Japanese government's active efforts to attract foreign talent and investment (by promoting highly skilled foreign personnel and encouraging direct investment). It recognizes the recent increase of M&A activity through foreign PE funds.

These initiatives are important because more than 40 percent of Japanese companies in the TOPIX 500 Index have P/B ratios below one. This compares with just 5 percent of companies in the S&P 500 Index and 24 percent in the Bloomberg European 500 Index. PE's emphasis on productive use of capital aligns well with Japan's effort to improve financial metrics in public companies.

[1] Companies meeting the following two conditions were scoped: listed as of fiscal year 2017 and have completed reporting of fiscal year 2022 financial results as of the end of July 2023; and no stock splits or reverse stock splits during the subject period.
[2] Future Human Resources Vision, Ministry of Economy, Trade and Industry (METI) of Japan, May 2022.
[3] "Stock prices also rise for companies with high engagement!," Joint research by Atrae Co., Ltd. and Mikiharu Noma of Hitotsubashi University, October 5, 2022.

3. Continue to build out a holistic value creation playbook customized for Japan

PE firms achieve their core objectives when they embed value creation capabilities in the companies they buy. In Japan, they can achieve this by stepping up across three dimensions: closing the digital gap, accessing untapped opportunities overseas, and enhancing business-building and innovation capabilities:

— *Seek out companies in need of stronger digital and AI capabilities and guide their transformation.*

- Japan ranks 29th out of 63 countries in the 2022 IMD World Digital Competitiveness Ranking, after four consecutive years of declines. Furthermore, only 34 percent of business leaders in Japan believe their companies are ready to promote digital, compared with 57 percent in Germany and 83 percent in the United States.[4]

  The digital priorities for a given company will be based on the context in which it operates. Starting in the due diligence phase, investors should evaluate how digital and AI could impact the business. They can then plan initiatives that reflect the company's business priorities and minimize the risk of disruption. As majority shareholders, PE owners can be catalysts for improvements in areas such as back-office processes, analytics (transaction pricing, salesforce deployment), and generative AI, which can support enhanced customer service, agile marketing, and product development.

  To deliver on this agenda, PE should be willing to play an active role in guiding management teams. This would require not only expertise in digital and AI but also change-management capabilities, leveraging in-house or external expertise.

— *Strengthen innovation capabilities to create new sources of revenue.*

- Digital and AI capabilities can be harnessed both to foster productivity and deliver incremental revenue. By investing in capabilities, PE firms can help companies establish new services and business models, strengthen customer relationships, and boost performance.

  Japan has a strong innovation culture, yet there is potential for companies to create new revenue streams from the value they create for customers. Markets outside of Japan have seen a business model shift away from onetime sales to ongoing services that better address customer needs—the so-called subscription model, which in public markets is associated with higher valuations. Perhaps for this reason, many Japanese companies are already moving in this direction. The Japan subscription market now generates around ¥1 trillion ($700 billion) in annual income, amid growth of 9 to 11 percent from 2020 to 2022 (CAGR), and we expect this momentum to continue.[5]

— *Accelerate international growth and competitiveness.*

- Many Japanese companies are "underweight" in overseas revenues, reflecting a focus on the opportunities available at home as well as a culture of risk aversion. As a percentage of GDP, Japanese exports are lower than any country except the United States. A particular challenge may relate to talent and organizational design: when asked in a recent survey if they had sufficient talent to operate overseas, 70 percent of Japanese companies said "no" or "most likely no."[6] Given their access to

[4] IMD World Competitiveness Center: World Digital Competitiveness Ranking, IMD, 2023.
[5] Current status and outlook of the subscription/fixed-rate service market, Yano Research Institute Ltd, March 30, 2022.
[6] "Policy evaluation regarding the promotion of global human resource development," Ministry of Internal Affairs and Communications, July 14, 2017.

global talent across extensive networks, PE firms are ideally placed to help companies overcome these challenges.

4. Pursue investment opportunities in growth-stage companies.
PE funds are starting to consider growth investment opportunities in earlier-stage companies. The need for start-up financing in Japan is accelerating and has grown to a scale of more than ¥900 billion ($634 billion) since 2022. On the other hand, the number of IPOs has not shown consistent growth, rising from 102 in 2020 to 136 in 2021, and then hovering in the 110s since 2022. In addition, recent examples of IPOs reveal that some companies have taken more than 20 years from inception to achieve an IPO, and the number of cases where the IPO application period exceeds one year is increasing. Based on this investment environment, there are companies with growth potential that have capital needs. PE funds are pursuing this opportunity to inject growth capital, providing means for VC funds to exit and for the start-up company to accelerate its growth.

What should PE investors do next?

Japanese private equity is a growing presence in the financial landscape. But the industry still has an opportunity to grow. Many Japanese companies could benefit from increased digitalization, internationalization, and reinforcement of recurring-revenue business models—all of which PE firms could bring to the table.

PE could also create value by aligning with emerging trends, such as the desire among employees for upward mobility and engagement. Higher levels of engagement are associated with increased financial returns in both publicly and privately held companies. The message for PE decision makers? If they make bold decisions and execute effectively, they can drive productive change and create a winning proposition for stakeholders across the corporate ecosystem.

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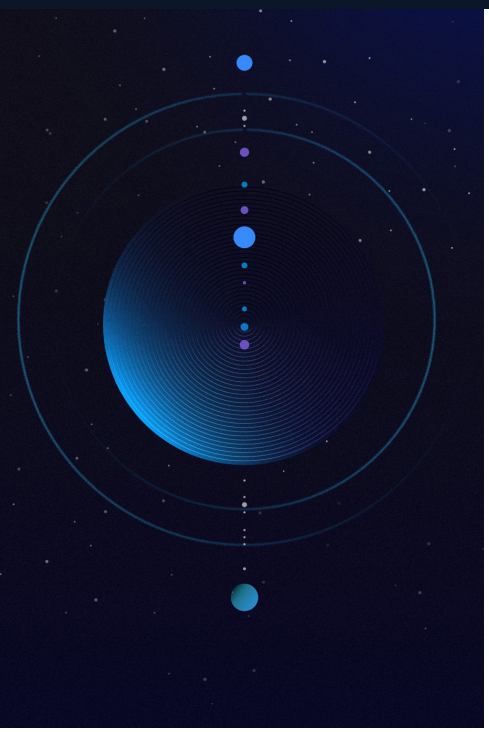
The authors wish to thank Bunsho Kure for his contributions to this article.

Highlights from McKinsey's 2024 sector research

Amid uncertainty, companies across industries are continuing to innovate, diversify and find new investment opportunities.



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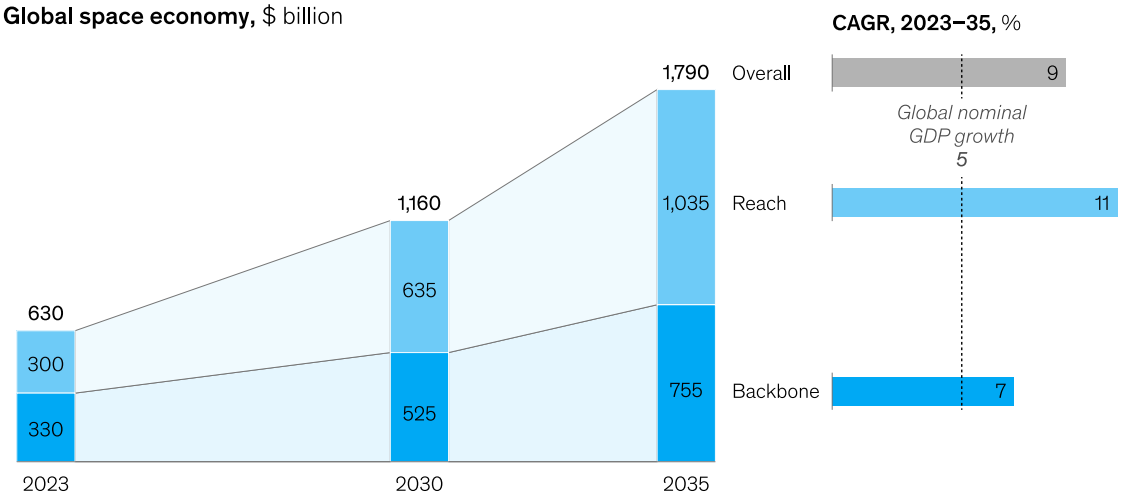
Aerospace & Defense

Space: The $1.8 trillion opportunity for global economic growth

by Brooke Stokes, Jesse Klempner, and Ryan Brukardt with Alizée Acket-Goemaere and Andrew Sierra

As the space economy goes from being niche to ubiquitous, it is creating value for multiple industries and providing solutions to many of the world's pressing challenges. According to a report by the World Economic Forum and McKinsey, considering an increasingly connected and mobile world, the global space economy could be worth nearly $1.8 trillion by 2035 (accounting for inflation), up from $630 billion in 2023. Space applications, including what the report describes as backbone and reach applications,[1] are expected to grow more than the projected rate of GDP growth during this period.

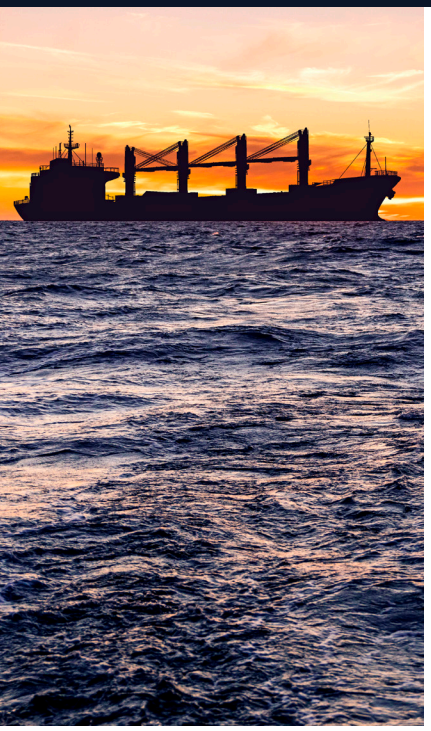
Space applications are expected to grow at a faster rate than global nominal GDP over the next decade.



Source: Future of Space Economy research

McKinsey & Company

[1] "Backbone" applications are applications such as those for satellites, launchers, and services (such as broadcast television or GPS). "Reach" applications are those applications for which space technology helps companies across industries generate revenues. July 14, 2017.



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Agriculture

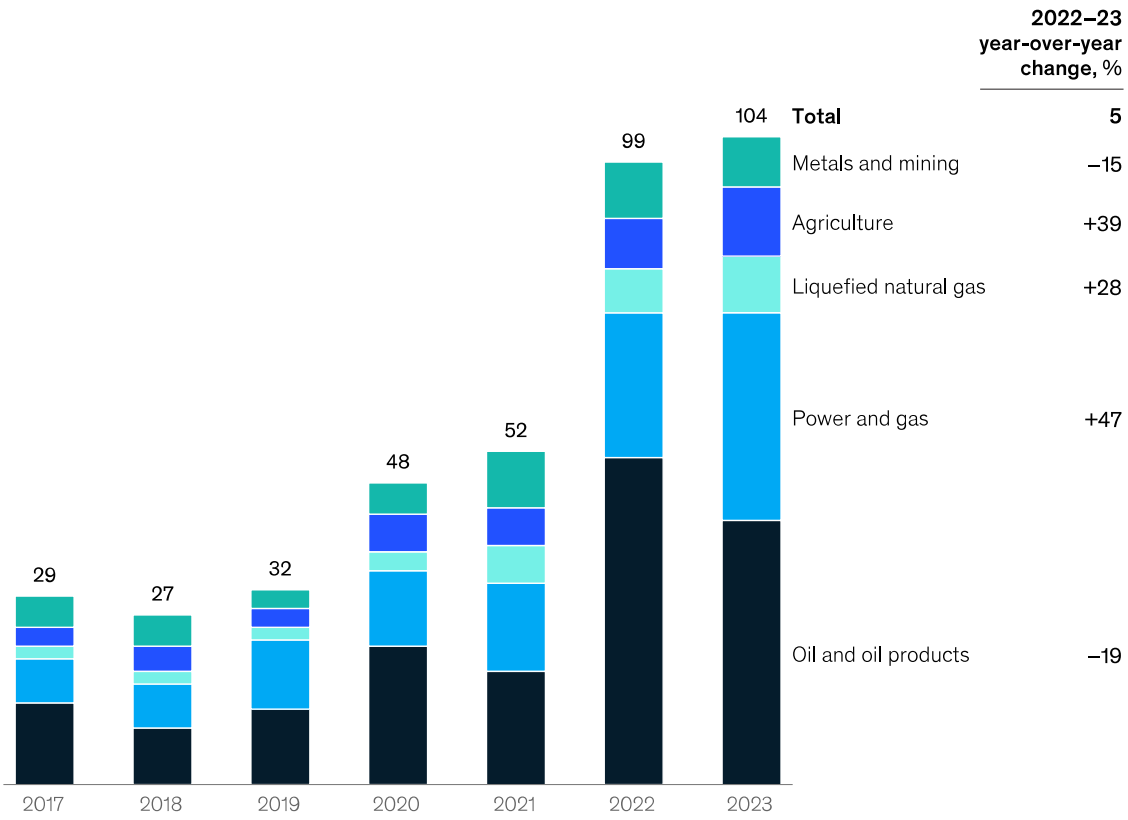
The critical role of commodity trading in times of uncertainty

by Joscha Schabram and Roland Rechtsteiner
with Piotr Pawlowski

Higher interest rates and supply chain disruptions have been creating greater uncertainty in commodities markets—which, in turn, has been propelling large value pools in trading. Certain segments have shown more resilience than others, of course. Trading value pools for power and gas, liquefied natural gas, and agriculture grew in 2023 because of robust demand for those resources and increased competition. By contrast, profitability decreased for oil and oil-based products as well as metals and mining. To keep pace with shifting markets and rising competition, commodities traders and other industry players will need to assess which cross-commodity opportunities are the best fit, what role traders can play in power, and how to differentiate among managing illiquid risks, data-driven trading, and having deep capabilities in niche commodities.

Commodity trading value pools have more than doubled since before the pandemic.

Total trading EBIT, $ billion



Note: Figures may not sum to totals, because of rounding.

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Automotive & Assembly

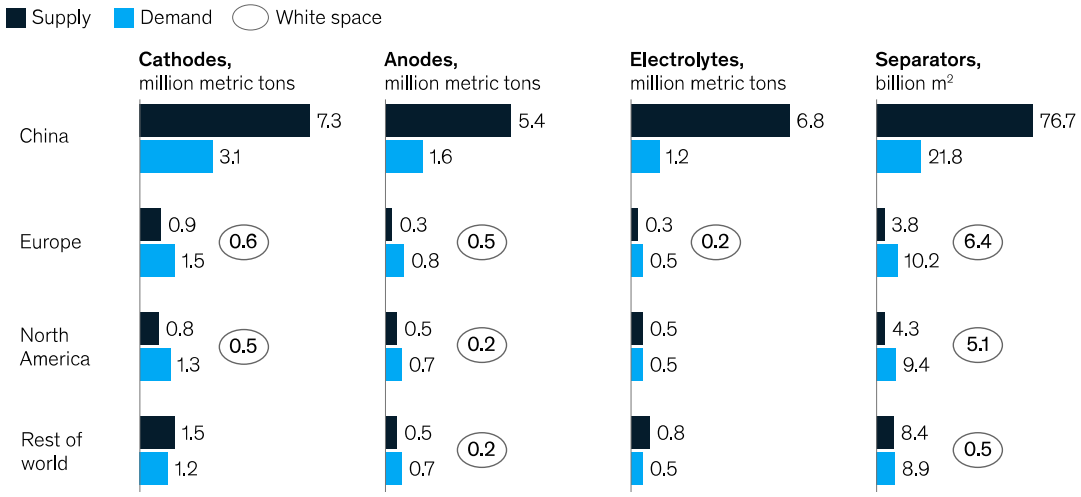
The battery cell component opportunity in Europe and North America

by Eugen Hildebrandt, Jakob Fleischmann, and Raphael Rettig with Konstantin Huneke and Patrick Scott

Growing demand for battery cell components is opening a window of opportunity in Europe and North America. By 2030, these two regions are each expected to house approximately 20 percent of global battery cell production. In contrast, McKinsey research suggests that these regions could hold anywhere from 5 to 10 percent of global cell component capacity, lagging further behind incumbents in Asia—specifically in anode material as well as the value chain for lithium iron phosphate cathode active material. To capitalize on this growth opportunity, cell component suppliers, start-ups, and new entrants could accelerate growth by securing substantial funding to set up operations, ensuring efficient capital deployment and strategic talent acquisition, adapting to new legislations promoting cell component localization, and staying ahead of imminent technological advancements.

By 2030, Europe and North America will likely need to import locally produced core cell components.

Battery component production volume by region 2030[1]



[1]Based on company announcements, Q4 2023. Indicating rest-of-world, agnostic view on battery chemistry.

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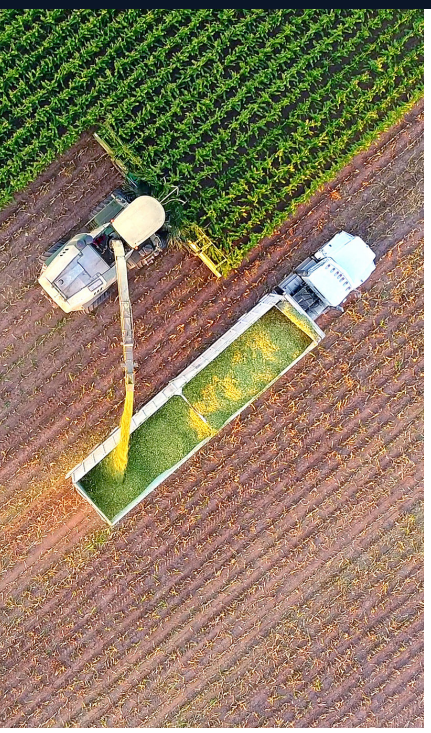

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Chemicals

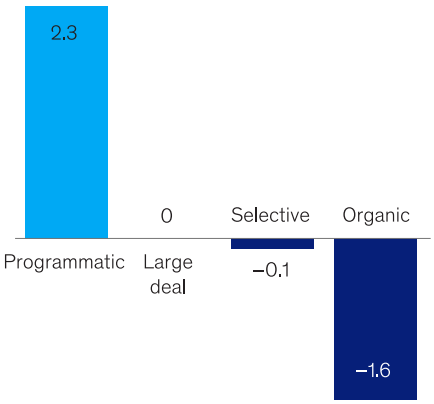
Chemicals: Success through timely, tailored action

by Christine Johnson, Obi Ezekoye, and Ulrich Weihe with Andrew Rose

In recent years, M&A activity in the chemical industry has been hit hard by broader economic shifts. Total deal value in chemicals in both 2022 and 2023 was 30 percent lower than the average of the prior eight years. Despite this reduction in overall deal activity, programmatic M&A and megadeals continue to drive value for chemical companies. To improve the odds of M&A success, companies must tailor the integration approach to their growth and capability-building objectives, ensure they have planned for the day-one risks particular to the industry, and protect and nurture the technical, hard-to-replace talent that generates the most value.

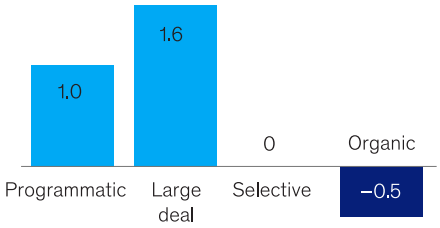
In chemicals, both programmatic and large-deal M&A can deliver excess TSR.

Global 2,000[1] median excess TSR by program type,[2]
% (Jan 2013–Dec 2022)



Excess TSR, % (standard deviation)	8.2	8.6	8.3	9.9

Chemicals median excess TSR by program type,[2]
% (Jan 2013–Dec 2022)



	5.1	9.0	6.0	8.3

[1]Companies that were among the top 2,000 companies by market cap on Dec 31, 2012 (more than $2.5 billion), and were still trading as of Dec 31, 2022; excludes companies headquartered in Africa and Latin America.
[2]Program type classified over 5 years.
Source: Global 2,000 (2022); S&P Capital IQ; McKinsey Value Intelligence

McKinsey & Company

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Consumer Packaged Goods

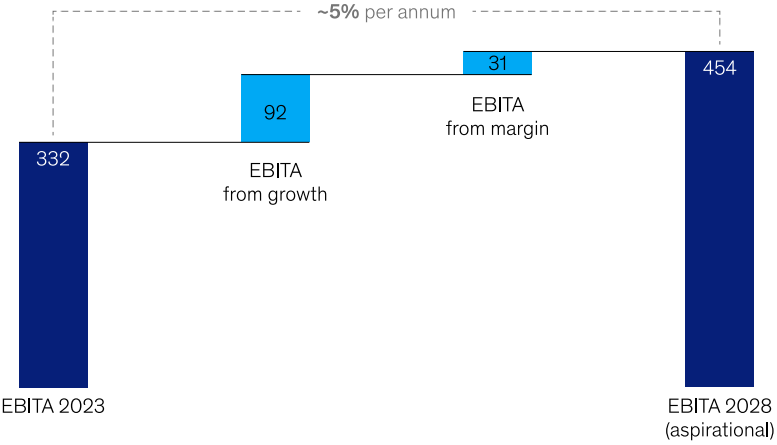
Rescuing the decade: A dual agenda for the consumer goods industry

by Jessica Moulton, Pavlos Exarchos, and Warren Teichner

Growth in the consumer-packaged-goods (CPG) industry has been in a slump over the past decade for a number of reasons, including economic conditions, consumer fragmentation, the mass merchant squeeze, and escalating and volatile costs. To return to top-quartile performance, CPG companies will need to deliver 4 to 5 percent annual top-line growth at 15 to 16 percent EBITA, on average, according to McKinsey research. Now more than ever, CPG companies need strong management practices to reshape their current portfolios, extend them into new businesses, and expand access to sources of profitable growth. CPG companies also need to focus on building new capabilities that will allow them to capture market share, grow their presence, pursue emerging opportunities (such as in the premium space), and work more productively.

Returning to top-quartile industry TSR performance will require annual EBITA growth of approximately five percent.

Consumer-packaged-goods industry aspiration EBITA bridge,[1] $ billion



	Percent contribution, %	Quantum	Comparison points	Implications
EBITA from growth	75	4–5% revenue growth	• 3.5% analyst expectations • ~3–5% total industry growth, 50% less than in the 2000s	100–200 basis points "extra" growth, requiring innovation and category expansion
EBITA from margin	25	15–16% EBITA	• ~14% in 2023	100–200 basis points "extra" margin, requiring a step change in productivity

Note: Figures may not sum, because of rounding. Top-quartile industry TSR performance = 15%.
[1]Based on 269 large, publicly listed consumer-packaged-goods companies (excluding agriculture) with market cap and revenue above $1 billion.
Source: S&P Capital IQ; CPAnalytics; McKinsey analysis

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Electric Power & Natural Gas

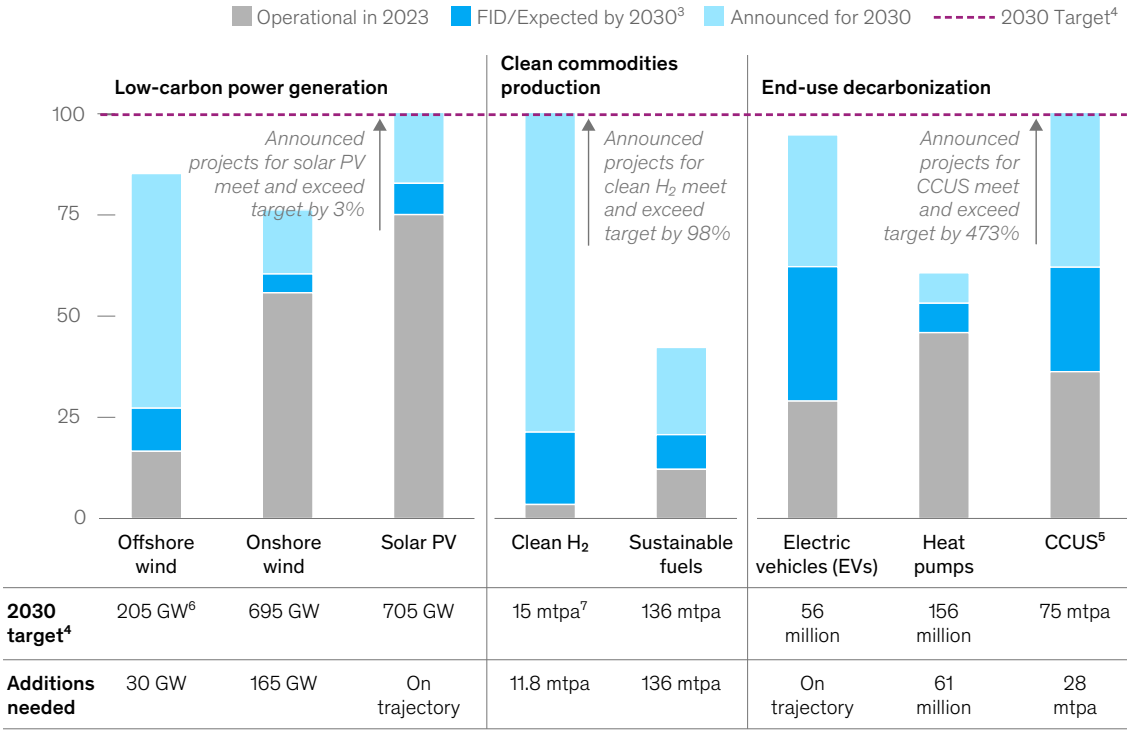
The energy transition: Where are we, really?

by Diego Hernandez Diaz, Humayun Tai, and Thomas Hundertmark with Michiel Nivard and Nicola Zanardi

Global governments and organizations are making meaningful progress in scaling the deployment of decarbonization technologies to achieve net-zero objectives. However, McKinsey analysis of targets and announcements highlights a potential disconnect between climate ambitions and what is likely to be achieved in practice—at least at the sector's current course and speed. For example, in the United States alone, more than 1,000 green- or blue-hydrogen projects have been announced since 2015. However, less than 15 percent had reached final investment decision as of August 2024, indicating a high risk for project fall-through, according to McKinsey research. Now is the time for stakeholders across the energy value chain to revisit their decarbonization plans.

Investment announcements have been significant but many have failed to reach final investment decision.

Technology deployment pipeline in EU27+3[1] and US vs targets,[2] % of target, normalized



	Offshore wind	Onshore wind	Solar PV	Clean H_2	Sustainable fuels	Electric vehicles (EVs)	Heat pumps	CCUS[5]
2030 target[4]	205 GW[6]	695 GW	705 GW	15 mtpa[7]	136 mtpa	56 million	156 million	75 mtpa
Additions needed	30 GW	165 GW	On trajectory	11.8 mtpa	136 mtpa	On trajectory	61 million	28 mtpa

[1]EU27 + Norway, Switzerland, and the United Kingdom. [2]Technology deployment is a measurement to understand the gap between actual vs needed deployment. [3]Final investment decision (FID) except for EVs and heat pumps (expected sales based on average sales over the last few years). [4]Target as defined for 2030 for both EU27+3 and the US; for solar, sustainable fuels, and heat pumps, no target exists, and the McKinsey Sustainable Transformation scenario was used. [5]Carbon capture, utilization, and storage. [6]Gigawatts. [6]Metric tons per annum.
Source: EHPA; EIA; Eurostat; IEA; Rystad; Wind 4C; McKinsey Energy Solutions; McKinsey Hydrogen Insights

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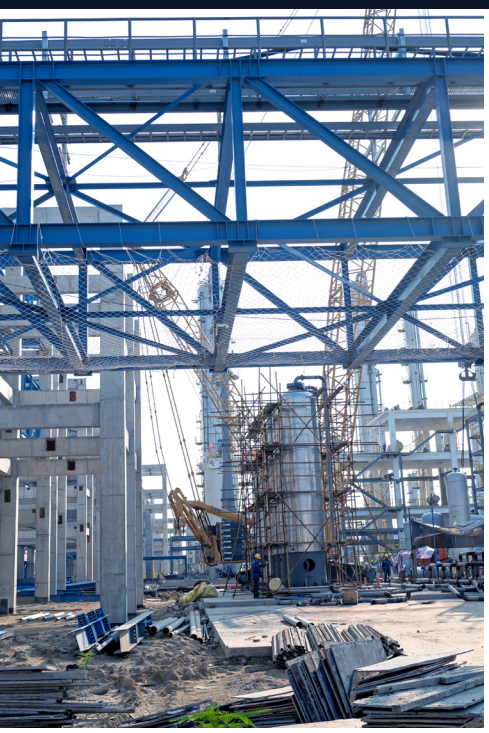

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Engineering, Construction & Building Materials

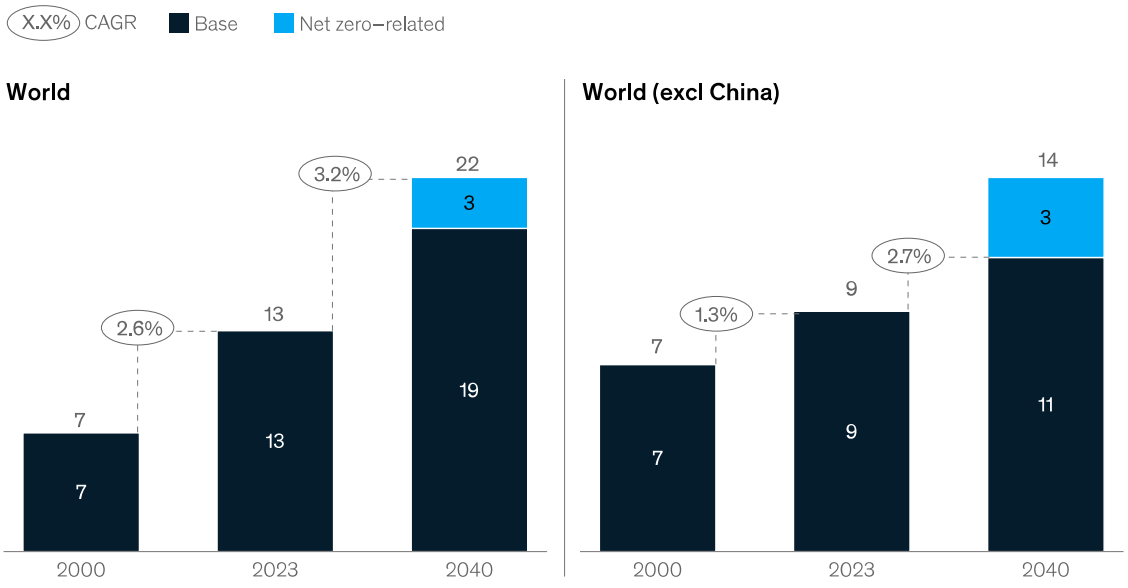
Delivering on construction productivity is no longer optional

by Jan Mischke, Kevin Stokvis, and Koen Vermeltfoort with Birgit Biemans

The construction industry plays an important role in fulfilling critical economic and societal needs. In constant prices, global construction spending is projected to rise from $13 trillion in 2023 to a striking $22 trillion in 2040, with a CAGR of 3.2 percent. This means that the industry, excepting China, will need to double its growth rate to deliver on these 2040 projections. Achieving this won't be easy. The industry must overcome a tight supply of workers and long-running stagnation in labor productivity in the sector (the economic value added per hour worked). As a starting point, construction executives can ensure that evergreen, foundational measures are in place to set teams up for success and higher productivity, including adequate team staffing, robust planning and design processes, fewer and better handovers, and apprenticing of capable people. But they also need to work on new project steering methods, longer-term value chain partnerships, portfolio-wide improvement scaling, and new technologies. Investors in structures, in turn, may need to plan for tight capacity and continued price escalation.

Construction is already one of the largest industries, but its growth rate (excluding China) would need to double to meet 2040 demand.

Annual construction spend, $ trillion (real 2019),[1] 2000–23 and 2023–40



Note: Figures may not sum to totals, because of rounding.
[1]Base spending is calculated based on IHS Markit estimates. Net-zero-related spending is calculated based on McKinsey Global Institute forecasts, which assume that all net-zero capital expenditures in power, buildings, fossil fuels, and industry are directed to construction (but not to machinery or other physical assets).
Source: McKinsey analysis based on data from IHS Markit and McKinsey Global Institute

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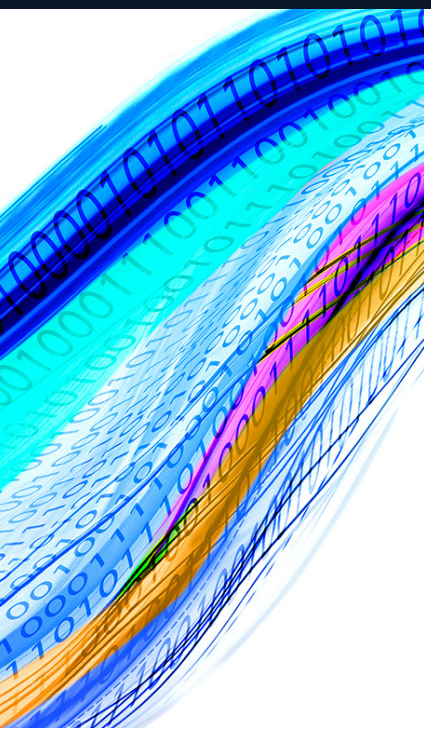

Financial Services

From ripples to waves: The transformational power of tokenizing assets

by Anutosh Banerjee, Julian Sevillano, and Matt Higginson with Donat Rigo and Garry Spanz

Tokenization can empower financial institutions to capture operational efficiencies, increase liquidity, and create new revenue opportunities through innovative use cases. However, despite these benefits and strong growth outlook, the industry is still in the early stages of adoption. According to McKinsey analysis, total tokenized market capitalization could reach about $2 trillion by 2030, driven by adoption in mutual funds, bonds and exchange-traded notes, loans and securitization, and alternative funds. To get ahead of the curve, banks, asset managers, and market infrastructure and other players should assess their product suites and identify which assets would most benefit from transitioning to tokenized products.

Industry outlook: Base case estimate of potential value of tokenized assets by 2030 is nearly $2 trillion.

An analysis of tokenization waves by asset capitalization potential and adoption drivers

Wave	2030 tokenized asset market capitalization base case, $ trillion		Examples of use cases driving adoption
1	Cash and deposits[1]	*Excluded from total* ~1.1	24/7 business-to-business payments
	Mutual funds and ETFs[2]	~0.4	Money market fund distribution
	Loans and securitization[3]	~0.3	Streamlined warehouse lending
	Bonds and exchange-traded notes[4]	~0.3	Intraday repo/collateral mobility
2	Alternative funds[5]	~0.2	Distribution and investor onboarding
	Alternative assets[6]	~0.1	Liquid secondary market
	Unlisted equities[7]	~0.1	Liquid private markets for secondary sales
	Precious metals[8]	~0.1	Collateral in decentralized finance
3	Publicly listed equities[9]	<0.1	Clearing and settlement efficiencies
	Intangible assets[10]	<0.1	Real-time distribution of royalties
	Derivatives[11]	<0.1	Clearing and settlement efficiencies
	Total value tokenized in 2030	~1.9	

[1]Tokenized cash and deposits are excluded from total to avoid double counting, since these are involved in the settlements of trades involving tokenized assets. [2]ETFs, mutual funds and money market funds. [3]Wholesale loans, mortgage and home equity, structured credit. [4]Government bonds, municipal bonds, corporate bonds, commercial paper, etc. [5]Private equity/venture capital funds. [6]Real estate (including real estate investment trusts), carbon, art and collectibles, and commodities (excluding precious metals). [7]Single unlisted private equity and mezzanine financing. [8]Gold, silver, platinum, palladium. [9]Listed corporate equities. [10]Intellectual property (brands, trademarks). [11]Options, futures, swaps, warrants, investment certificates, excluding over-the-counter derivatives.
Source: Bank for International Settlements; Deal Logic; Federal Reserve Bank of St Louis; Prequin, Savills; Statista; The Block; WFE; expert interviews

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Healthcare

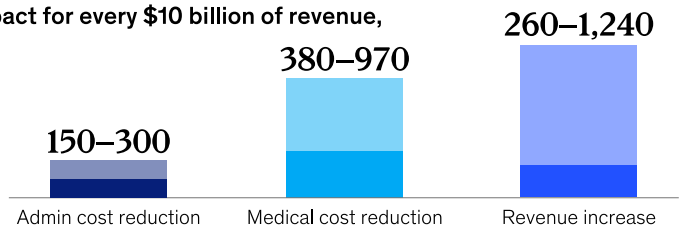
How healthcare payers can capture the AI opportunity

by Shubham Singhal and Jessica Lamb

AI and automation have the vast untapped potential to lower administrative and medical costs and increase revenue for players in the health insurance industry. According to McKinsey research, payers using currently available technology could achieve net savings of 13 to 25 percent in administrative costs, 5 to 11 percent in medical costs, and 3 to 12 percent higher revenue. To capture full value, payers would do well to reimagine the end-to-end processes of each domain, with active involvement from everyone in the C-suite, including the CEO.

AI's potential impact on payers varies by domain.

Estimated value of AI impact for every $10 billion of revenue, (illustrative), $ million



Summary of impact on payers by domain (illustrative),[1] % improvement

	Admin cost	Medical cost	Revenue[2]
Marketing and sales	0.4–1.7		0.6–6.8[2]
Utilization management	0.7–2.7	1.0–2.9	*Member retention opportunity captured in marketing and sales*
IT	5.0–5.5		
Claims	0.9–3.4	0.4–1.9	
Care management	1.4–1.7	1.7–3.6	
Risk accuracy	1.6–1.8		1.5–3.0
Network and contracting	0.4–0.7	1.5–3.0	
Corporate functions	0.4–2.6	*Member engagement-driven opportunity captured in utilization management and care management*	
Services	0.7–2.3		
Product	0.1–0.2		0.5–1.8
Enrollment and billing	0.4–1.8		
Quality/stars	0.4–0.5		0.0–0.7
Business strategy and analytics	0.0–0.1		
Total	**13–25**	**5–11**	**3–12**
Pharmacy benefit manager (PBM)	20%–30% admin efficiency savings possible on PBM admin cost basis; considered separately since it is a portfolio asset		

[1]High-end estimate is based on the average payer's capabilities and workflows– and assumes all next-gen AI/automation capabilities are adopted, which is unlikely in practice. Low-end estimate of impact is based on high-performing and more technologically advanced payer, again assuming all next-gen capabilities are adopted.
[2]Not directly margin-accretive due to additional administrative and medical costs associated with higher membership.
Source: NAIC financial statements, 2022

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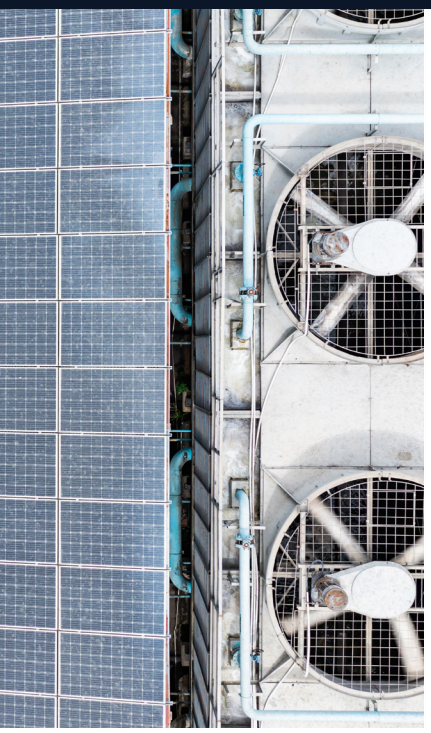

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Industrials & Electronics

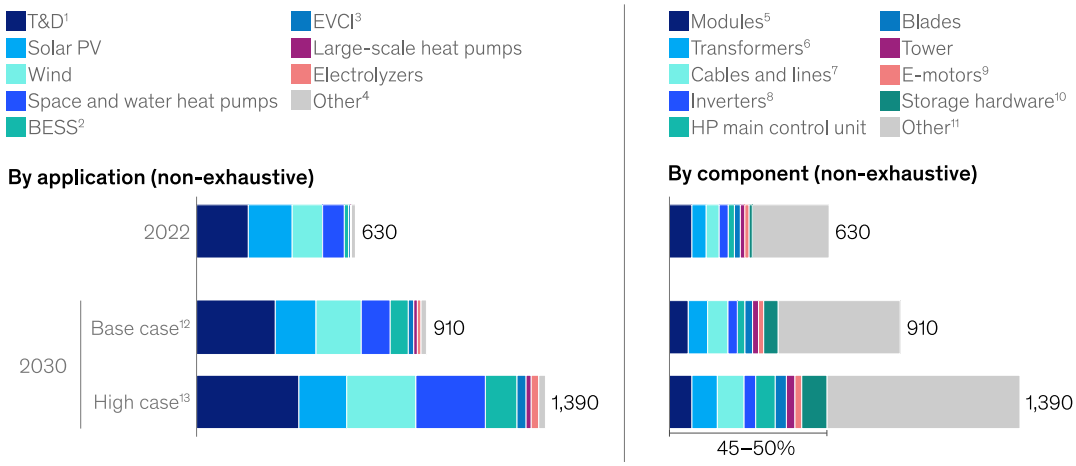
Global Energy Perspective 2023: Industrial electrification outlook

by Bram Smeets, Christer Tryggestad, Christian Jansen, Harald Bauer, Mikael Robertson, and Thorsten Schleyer
with Friederike Liebach, Luigi Gigliotti, and Tamara Grünewald

The energy transition is driving significant demand for technologies that enable electrification, including solar PV, wind, heat pumps, and battery energy storage systems. According to McKinsey's *Global Energy Perspective 2023*, OEMs' revenues in electrification hardware could increase by between 1.4 and 2.2 times by 2030, reaching between $0.9 trillion and $1.4 trillion for selected key technologies, depending on the speed of the energy transition and how effectively supply chain bottlenecks are addressed.

Global OEM revenues in electrification hardware are projected to reach up to $1.4 trillion by 2030 for key technologies.

Projected global OEM revenues in selected electrification hardware, $ billion (2021 value)



[1]T&D hardware, including equipment for transformers, generation transformers, cables, and transmission. [2]Battery energy storage systems, excluding EV batteries. [3]Electric vehicle charging infrastructure. [4]Others includes e-motors for industrial applications (excluding e-motors for heat pumps). [5]Modules for solar PV. [6]Includes generation, distribution, and transmission transformers. [7]Includes overhead lines, underground cables, and subsea cables for T&D. [8]Includes inverters for solar PV, BESS, electrolyzers, and EVCI. [9]E-motors for industrial applications (excluding e-motors for automotive). [10]Includes cells and battery packs. [11]Other includes a wide range of further components, including eBOS for solar panels, electrical infrastructure for wind turbines, among others. [12]McKinsey Current Trajectory scenario. [13]McKinsey Achieved Commitments scenario.
Source: McKinsey Energy Solutions' Global Energy Perspective 2023; McKinsey Platform for Industrial Electrification 2023

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Life Sciences

Generative AI in the pharmaceutical industry: Moving from hype to reality

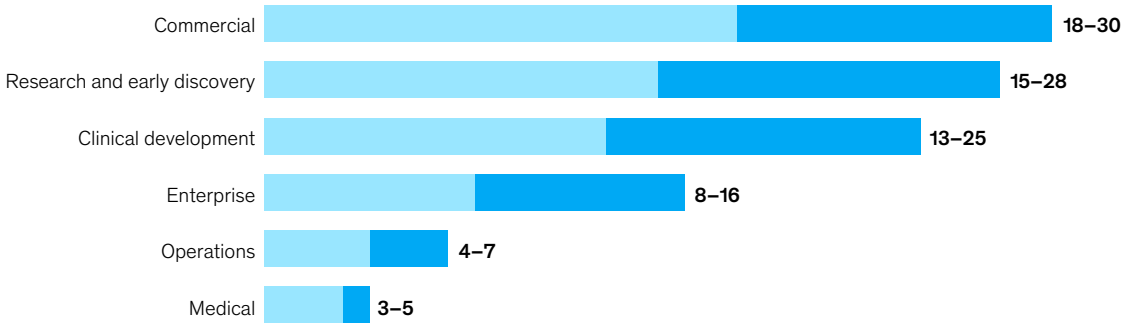
by Bhavik Shah, Chaitanya Adabala Viswa, Delphine Zurkiya, Eoin Leydon, and Joachim Bleys

Generative AI (gen AI) has the potential to address long-standing obstacles in the pharmaceutical industry and create new breakthroughs in science and patient care. McKinsey analyzed 21 individual use cases of gen AI across the life sciences domain and found that most of them can fall in one of four main categories: knowledge extraction, content and compound generation (such as, generative chemistry), customer engagement (such as services for healthcare providers and patients), and coding and software generation. For example, using gen AI tools for extracting and summarizing scientific knowledge could contribute to more than a 30 percent increase in initial manual assessments of drug targets.

Organizations must start working now to understand, implement, and scale their gen AI capabilities to gain a competitive edge.

Generative AI is expected to produce $60 billion to $110 billion in annual value across the pharmaceutical industry value chain.

Expected value annually, $ billion



Source: McKinsey analysis

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Oil & Gas

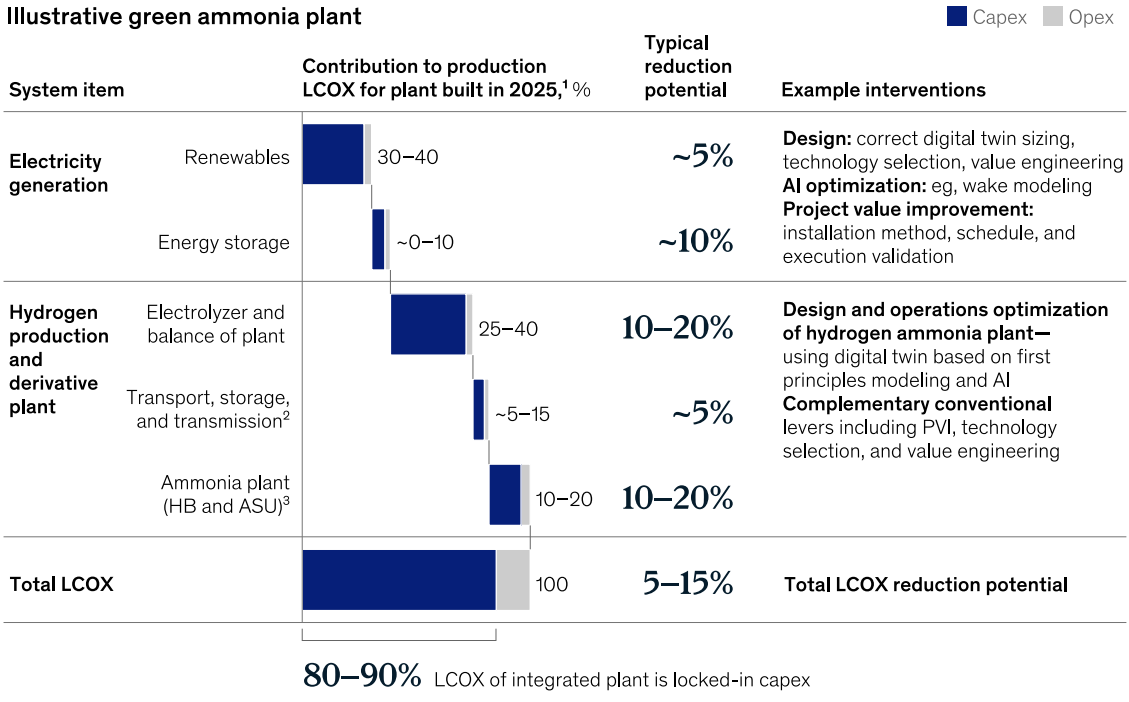
Digital twins: Capturing value from renewable hydrogen megaprojects

by Maurits Waardenburg
with Dominik Don, Joaquin Ubogui, and Nas Andriopoulos

Renewable hydrogen is a much-needed resource for helping the world achieve its decarbonization goals, but producing it on a large scale is hampered by several challenges, including costly infrastructure and lack of adequate hydrogen storage. Digital twins—which can simulate a physical plant from the planning stage (before it is built) to the end of its lifetime—could help reduce the risks of investment, save costs, and speed up project timelines. In fact, McKinsey research suggests that digital twins can help reduce production costs by 5 to 15 percent through leveraging traditional AI and generative AI techniques.

Production costs can be reduced by an estimated 5 to 15 percent through digital twins and supporting interventions.

Illustrative green ammonia plant



[1]These numbers are for an indicative end-to-end e-ammonia system in Northern Chile; the modeled plant used an atmospheric alkaline electrolyzer, with power supply ranges from 80 to 95% solar and 5 to 20% onshore wind, built in 2025, and assumed operational for 30 years.
[2]Includes hydrogen storage, pipeline, port infrastructure, and transmission lines.
[3]Haber-Bosch and air separation unit.
Source: McKinsey Hydrogen Insights production cost model, 2022

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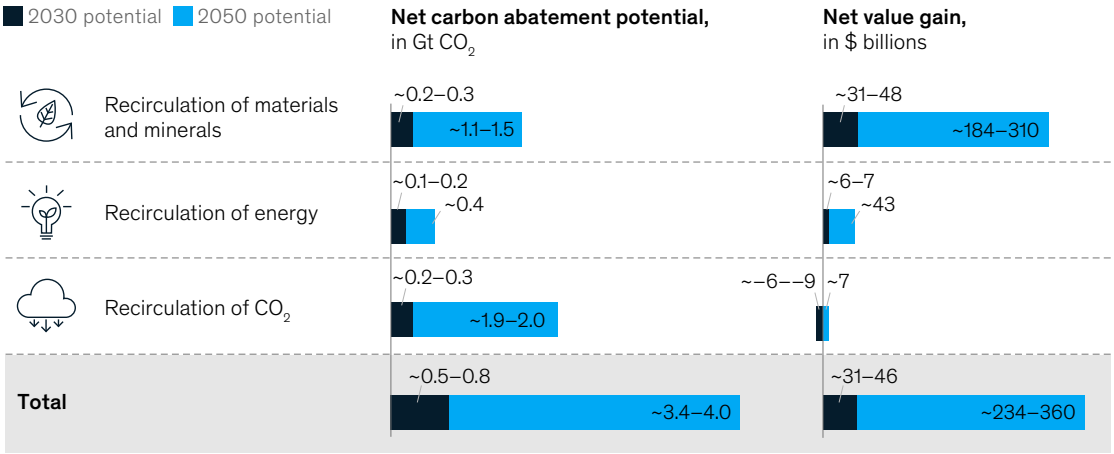
Real Estate

Building circular: Maximizing CO_2 abatement and business opportunities

by Jukka Maksimainen and Sebastian Reiter
with Anis Nassar, Fernando Gomez, Janice Klaiber, Jörgen Sandström, and Maximilian Gebhardt

A growing global population and the shift toward urbanization have increased the pressure on real estate companies to shift from current consumption and production patterns in the built environment toward a more sustainable, circular approach.[1] Research by McKinsey and the World Economic Forum demonstrates how circularity in the built environment can simultaneously create business value and reduce CO_2 emissions.[2] Across construction materials, for example, the annual net value of recirculating materials and minerals is estimated at $31 billion to $48 billion by 2030 and $184 billion to $310 billion by 2050.

Net value gain and carbon abatement potential of circular levers for the recirculation of materials and minerals, energy and embodied emission (CO_2).



Source: McKinsey analysis and calculations based on expert assessment and press research/technology reports

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[1] In a circular ecosystem, virgin-resource inputs and end-of-life waste are minimized and value is created without exhausting limited resources.
[2] This white paper quantifies the potential for CO_2 abatement and potential net value gain across nine circularity loops for six key building materials: cement and concrete, steel, aluminium, plastics, glass, and gypsum. The circularity loops are assessed through three dimensions: recirculation of materials and minerals, renewable and recovered energy, and reducing emissions through carbon capture and storage as well as carbon capture and utilization.

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Technology, Media & Telecommunications

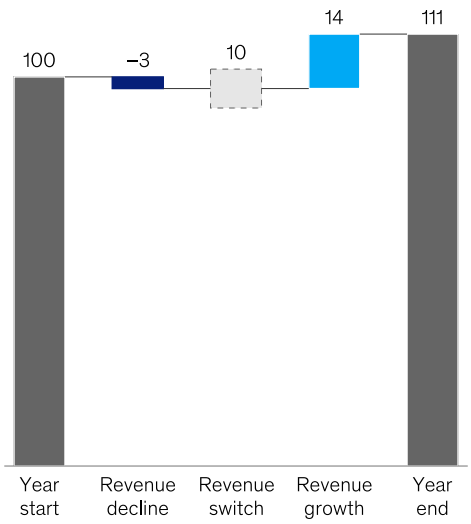
Navigating the generative AI disruption in software

by Jeremy Schneider and Tejas Shah
with Joshan Cherian Abraham

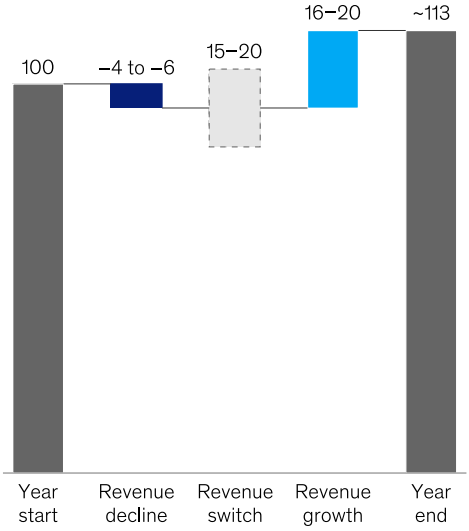
Generative AI (gen AI) is set to disrupt the enterprise software sector. By 2027, spending on the technology could reach between $175 billion and $250 billion, contributing an additional two to six percentage points of growth for the sector, according to McKinsey research. Gen AI could also lead to a large-scale acceleration of vendor switching by five to ten percentage points. In just a few years' time, this accelerated growth can cause significant shifts in the industry's user segments, value pools, and competitive dynamics. Now is the time for software players to start thinking seriously about how to adapt to this fundamentally changed landscape.

While fueling new growth and added churn, gen AI's biggest impact will be an acceleration of customers switching software vendors.

Historical software industry spending turnover,[1] % of market 2019–22



Post-gen-AI software industry spending turnover,[1] % of market 2027



[1]"Revenue decline" includes revenue eroded through customers switching to another vendor and stopping the usage of software altogether; "revenue switch" = overall revenue movement from/to software vendors, including in/out/switch; "revenue growth" = revenue acquired from replacing another vendor and signing net new customers.
Source: IDC, McKinsey analysis

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Travel, Logistics & Infrastructure

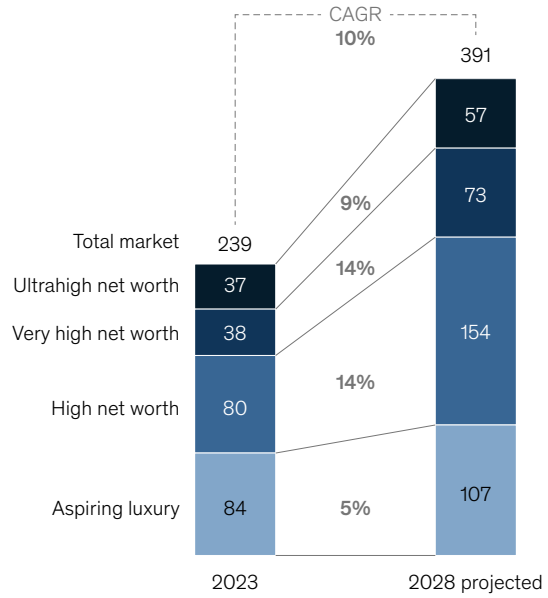
The state of tourism and hospitality in 2024

by Caroline Tufft, Margaux Constantin, Matteo Pacca, and Ryan Mann with Ivan Gladstone and Jasperina de Vries

According to McKinsey research, demand for luxury tourism and hospitality is expected to grow faster than for any other travel segment. This growth is powered in part by a sharp rise in the global number of individuals with net worths between $1 million and $30 million as well as a large and expanding base of aspiring luxury travelers (with net worths between $100,000 and $1 million). Some widely held notions about luxury travelers may be due for reexamination, however. McKinsey research found that millennial and Gen Z travelers are spending more money on luxury travel than those over 60, and Asians are also spending more on luxury travel.

The luxury-hospitality market is large, and some segments are growing quickly.

Global spending on luxury leisure hospitality, by wealth segment,[1] $ billion



[1]As defined by Knight Frank, aspiring luxury traveler has $100,000–$1 million net worth, high-net-worth traveler has $1 million–$5 million net worth, very-high-net-worth traveler has $5 million–$30 million net worth, and ultrahigh-net-worth traveler has >$30 million net worth.
Source: Capgemini; Credit Suisse; Knight Frank; Wealth-X; McKinsey analysis

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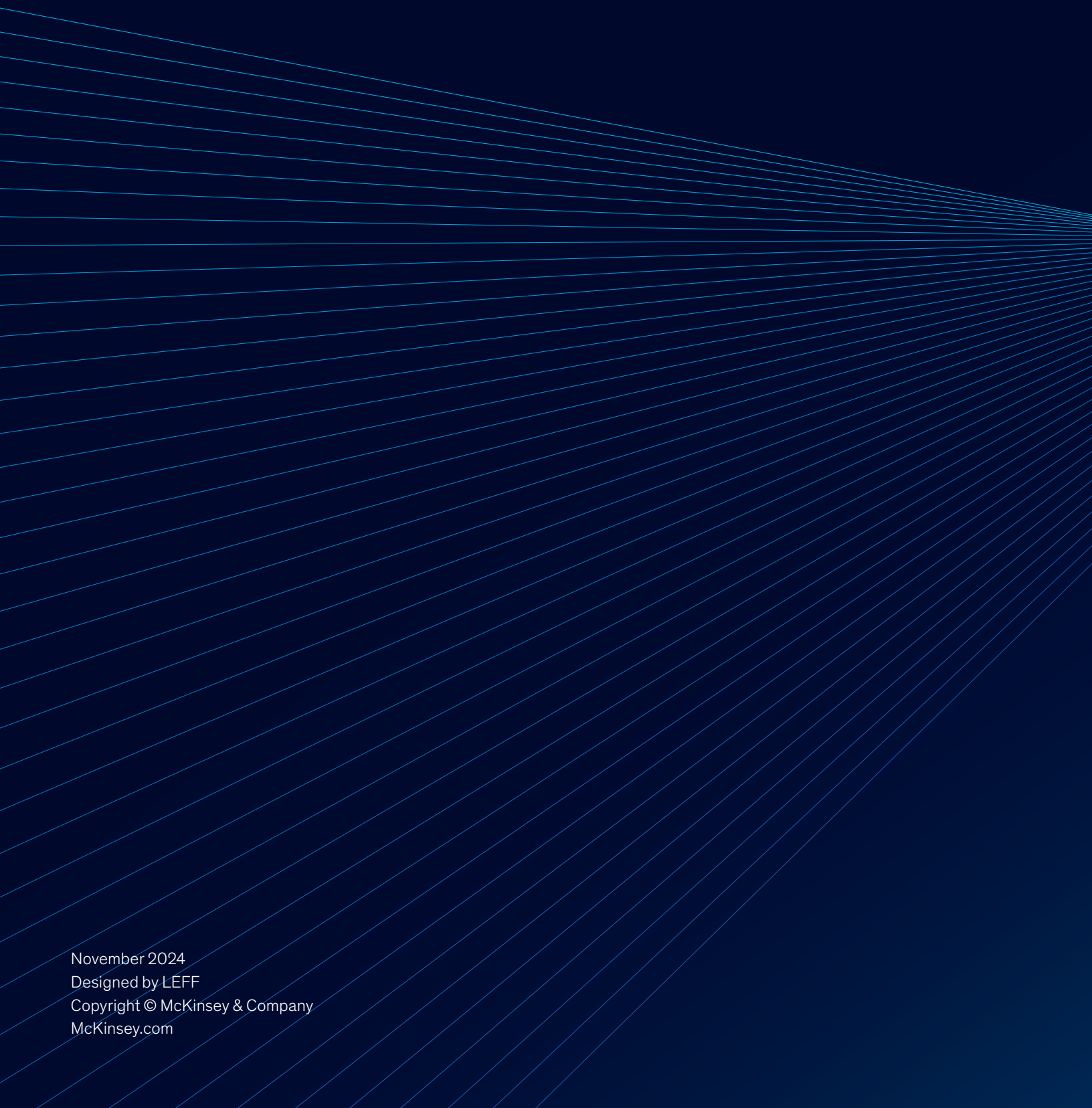

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