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McKinsey on Investing

Highlights

Is big really beautiful? The limits of pension consolidation

A closer look at impact investing

Private equity exits: Enabling the exit process to create significant value

Number 4, December 2018

McKinsey on Investing is written by experts and practitioners in McKinsey's global investor-focused practices, including our Private Equity & Principal Investors, Wealth & Asset Management, and Capital Projects & Infrastructure practices.

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Introduction

Welcome to the fourth volume of *McKinsey on Investing*, developed to share the best of our recent research and thinking relevant to investors. Colleagues from around the world and across many disciplines—including asset management, institutional investing, private equity, and infrastructure—collaborated to develop these insights. We were also privileged to speak on the record with Larry Fink of BlackRock about the perils of groupthink. We hope this combination of perspectives will provoke reflection, dialogue, and impact.

We begin with a set of three articles drawn from our current thinking on digital and analytics in investing. Two articles look at how digital is remaking private equity operations. The third article showcases one of the digital tools we have built in our work with venture-capital firms.

Other articles in this issue include a first-of-its-kind consideration of the merits of pension-fund consolidation (spoiler alert: they are not as obvious as many people seem to think) and new research on infrastructure investing in the age of drones and electric vehicles. We review the latest developments in impact investing and take a look behind valuations in US stock indexes. Our European experts weigh in with thoughts on how investors might seize opportunities in the continent's massive healthcare economy.

We conclude with three pieces of research on private equity: the findings from a survey of operating groups, an overview of private equity in South Korea, and a study of exits, including the three moves that leading firms use to capture the full value they have created in their portfolio companies.

We hope you enjoy these articles and find in them ideas worthy of your consideration. Please let us know what you think: you can reach us at Investing@McKinsey.com. You can also view these articles and many others relevant to investing at McKinsey.com and in our McKinsey Insights app, available for Android and iOS.

The Editorial Board

How private equity is tackling operational complexity

General partners are improving their efficiency and scalability through digital and analytical tools.

Sudeep Doshi, Bryce Klempner, Connor Mangan, and Nikhil Sudan

We recently surveyed 24 general partners (GPs) about their internal operations.[1] The research produced several surprises, none bigger than this: for private equity (PE) firms, economies of scale start to kick in at roughly $8 billion to $10 billion in assets under management (AUM)—and that is also about where they stop. For example, smaller firms tend to employ 22 to 30 people per $1 billion in AUM, while firms with $5 billion to $10 billion employ just nine. But firms with more than $50 billion under management employ almost as many (eight per $1 billion in AUM). In some functions, the expected efficiencies are not only absent but even reversed: we found evidence of diseconomies of scale across finance, operations, human resources, and compliance. In PE, the largest firms are in many ways less efficient than their smaller peers.

This complexity is a growing pain for the industry. The first buyout firms were founded in the 1960s, and an industry was born as many more followed in the '80s and '90s. The PE industry, now more than 30 years old, is maturing in many ways. Historically, GPs tended to tackle operational problems by adding people; relatively high profit margins meant GPs did not have to focus on efficiency or costs. Today, the problems are more complex; yesterday's bespoke solutions have begun to create their own challenges, and inefficiency not only adds considerably to costs but also inhibits scalability.

PE firms and other private market managers are now turning to digital tools to improve many parts of their business. In this article, we will look at how one of those parts—the back and middle office—has grown increasingly complex, as well as the ways in which digital and analytical capabilities can improve operational efficiency.

Layer upon layer

The PE firm of the 1990s was a fairly simple operation, with just a few products and a small number of clients. Today's PE firm offers an unprecedented variety of products to a wide range of clients. On every dimension—products, asset classes, legal entities, jurisdictions—PE firms are doing more and interacting with clients through a range of touchpoints, such as investor-relations staff, fund administrators, and digital portals. To take just one example, in the 1990s, few GPs offered more than a couple of distinct products. Today, the larger firms manufacture dozens of types of exposures, across many different asset classes around the world, for an ever more diverse client base.

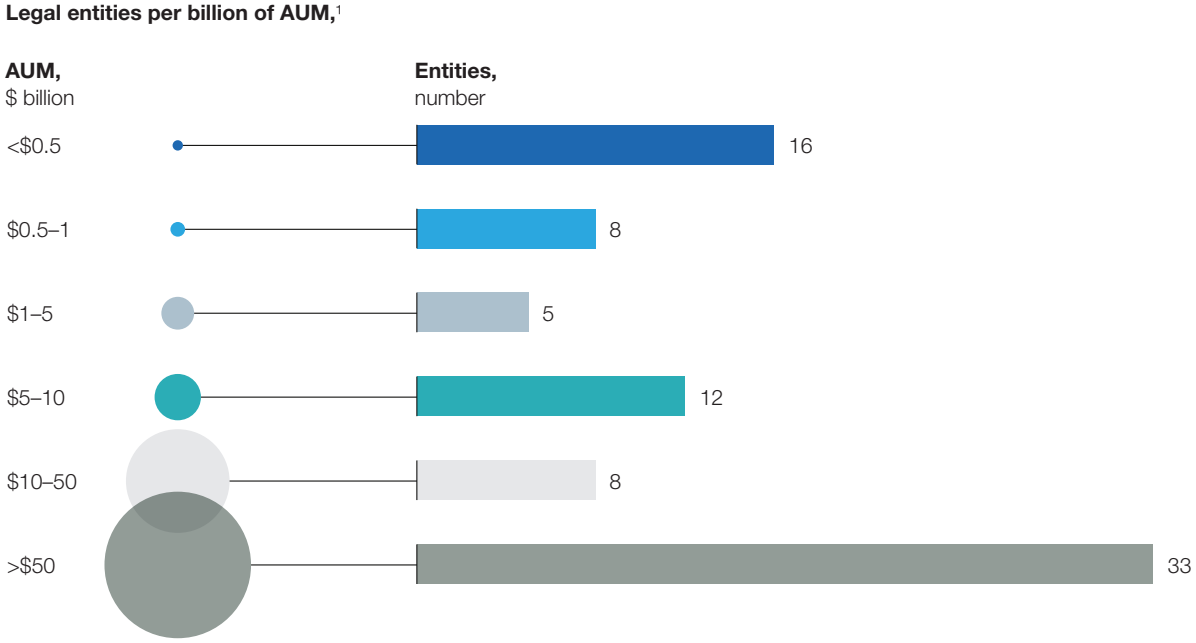
The result is extraordinary complexity. Our survey found several examples, starting with the number of legal entities firms create to house their products, assets, and operations (Exhibit 1). Compared with smaller firms, the largest ones create many more entities—thousands of them for the larger multi-asset-class GPs. That complexity has a cost, as each entity must be accounted for, put in compliance with regulations, reported on to investors, and so on.

One of the biggest sources of added complexity is the growing number of ways firms interact with clients. Commingled funds used to be virtually the only method. Then, separately managed accounts appeared (Exhibit 2). Today, firms regularly create all manner of new relationships: not just blind pools and separate accounts but also sidecars, coinvestments, and other structures with institutional clients—sometimes lumped together under the rubric of strategic partnerships. At the same time, firms are also experimenting with diverse vehicles aimed at the retail market. To be sure, this has created opportunities for more investors to access private markets with greater precision, but it has also massively increased complexity in the system, as each new arrangement is incrementally reflected in a firm's systems and processes.

In these and many other ways, complexity has been growing rapidly in PE. Behind the scenes, however, the modern PE firm still uses an outmoded approach to keep up: adding people. This has proved to be an expensive and inefficient solution in many cases. Our survey showed that in several functions, including

Exhibit 1

Complexity expands markedly in firms with more than $50 billion in assets under management (AUM).



[1] Calculated using total number of legal entities in each AUM grouping, divided by total AUM for funds within each AUM grouping.

Source: McKinsey survey of general partners, 2018

IT, finance, and fundraising, larger firms must hire proportionally more people than smaller firms do (Exhibit 3). Even where efficiencies show up (investment professionals, for example), they are much smaller than might be expected from a linear extrapolation.

This complexity (and the ability to control it) doesn't matter only for controlling costs. As the industry matures, GPs are increasingly judged against traditional asset managers and other large financial institutions—organizations with a decades-long head start in streamlining and scaling operations. As these firms begin to shoulder their way into alternative assets, GPs will need to become more competitive on these dimensions.

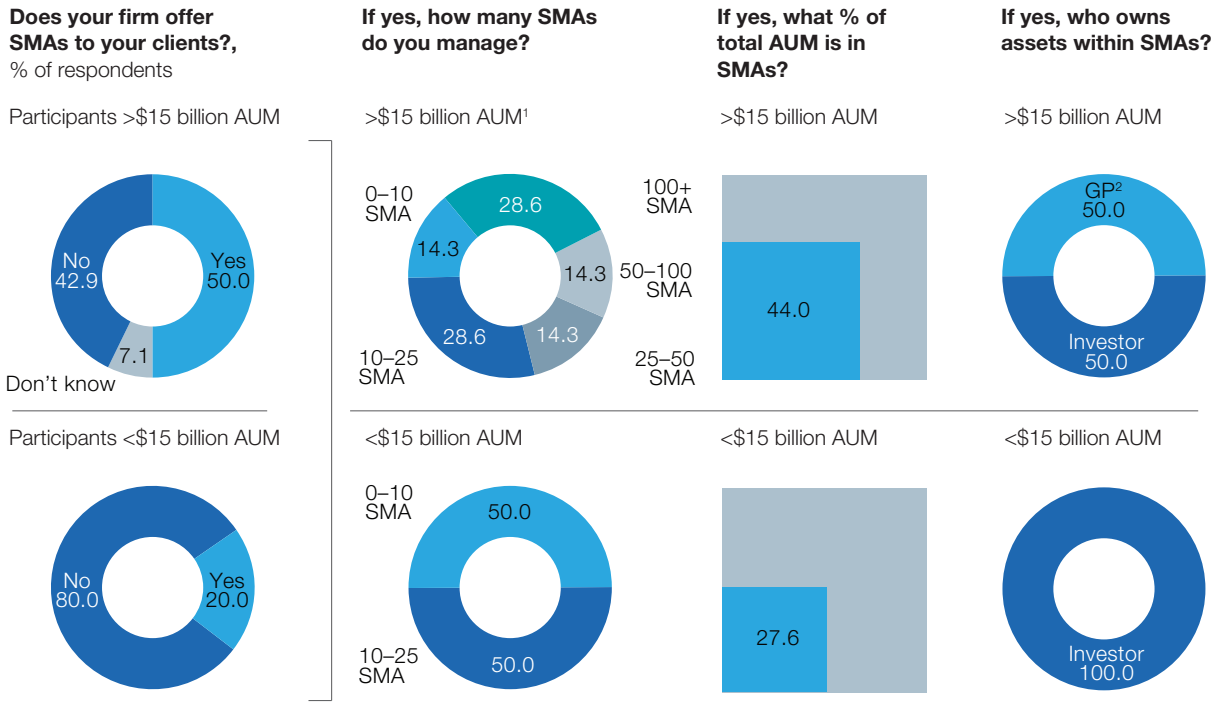
A digital path forward

Digital is remaking ways of doing business. McKinsey research finds that, on average, companies around the world have digitized nearly 40 percent of their work.[2] That research did not include the private investing industry, but in our experience, GPs have thus far stayed mostly on the digital sidelines, even as they have ensured that their portfolio companies are digitally competitive.

Digital offers GPs an escape from their productivity trap. Across back- and middle-office functions, a digital transformation holds the promise of creating expected economies of scale, so GPs can grow more profitably. More firms are willing to acknowledge that goal today than during what for many GPs was the stick-to-your-knitting times of the past.

Exhibit 2

A big factor in rising complexity of assets under management (AUM) is the separately managed account (SMA).



[1] Figures may not sum to 100%, because of rounding.
[2] General partner.

A digital transformation certainly harnesses the power of cutting-edge digital tools but encompasses so much more, including client-experience and design-thinking principles. Firms that successfully digitize their operations apply five core levers, in combination.

Client-journey redesign

Firms are looking at their functions through a new lens, the client journey: a progression of touchpoints (personal, digital, paper, events, and so on) that together constitute the limited partner's (LP's) experience of its GP. Seeing the world as clients do and reshaping interactions into sequences of activities that cut across traditional functions can help firms organize and mobilize their employees around their clients' needs. Some firms, for example, have improved the client experience and their internal productivity by redesigning the way they deliver investment and market insights to LPs.

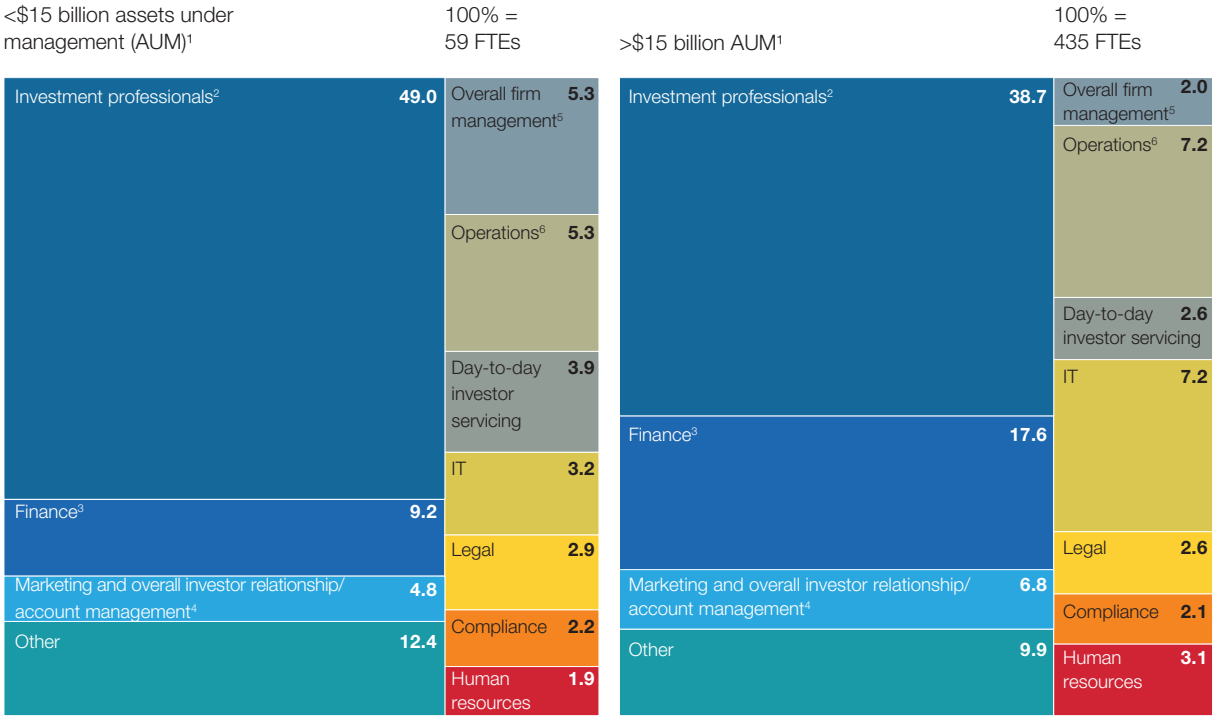
Intelligent process automation

Firms find significant efficiencies by investing in robotics to perform common, repetitive, and low-value tasks—for instance, using advanced optical character recognition to scan the reporting packages of portfolio companies, and then bots to upload those packages to a portfolio-management system. Smart work-flow tools are used to streamline and systematize complex activities, such as the money in/money out process, which requires numerous lookups, validations, and approvals across segregated functional roles in the treasury and accounting functions. This kind of intelligent process automation frees valued employees from

Exhibit 3

As firms grow, some functions scale worse than others.

How many professionals does your firm employ in each of the following areas?, % of all full-time-equivalent (FTE) employees



[1] Figures may not sum to 100%, because of rounding.
[2] For example, chief investment officer, portfolio managers, analysts, and traders.
[3] Including accounting, treasury, and tax.
[4] Excluding day-to-day investor servicing.
[5] For example CEO, president, managing partner.
[6] Including data management.

Source: McKinsey survey of general partners, 2018

burdensome work so they can focus on value-adding activities. That, in turn, helps firms to retain top talent and to perform well overall.

Business process outsourcing

Outsourcing to third parties allows firms to focus on their core value-adding work while enabling scale and supplementing in-house capabilities. While this is old hat for public-market managers, many PE firms find that business process outsourcing can help break the linear relationship between costs and scale, although ease and efficiency often dip initially as functions are outsourced. This change has been enabled by the transparency into providers that digital and work-flow tools make possible and by the growing capabilities of companies that provide PE services. Many PE firms are examining strategic partnerships with fund administrators, for example. Fundamental to this evolution is the dawning recognition among many GPs that even if they are quite singular, some of their business processes are becoming commoditized.

Advanced analytics

A new breed of advanced analytics (AA) is providing the intelligence to improve the speed and quality of decision making across middle- and back-

office functions—a development that will grow in prominence over the coming years. Although AA in PE is in the early stages, it has gained considerable traction in sales-force management. GPs are beginning to build data reservoirs of client characteristics, and they use AA to design more personalized distribution and service models centered on an understanding of their clients' needs. Another area with much promise is the generation of insights for client reporting through the application of artificial-intelligence techniques such as natural-language processing.

To succeed, AA must be coupled with strong data management, governance, and architecture—which, by and large, are new to private markets. Managers will also need both proprietary and third-party data to deliver benefits at scale. Firms that do this well focus on a few applications (typically, three to five) and ensure that these deliver a return on investment before moving on to others.

Digital sprints

Leading GPs that transform their operations are not tweaking steps here and there but instead examining processes end to end and reimagining what they could look like with a new digital tool kit. Likely targets for digitization include tax reporting for thousands of entities, and bank-account reconciliations.

Firms are executing these digital transformations not as traditional "waterfall" projects, many of which fail to deliver their full promised impact. Instead, they rely on short digital sprints: 12- to 16-week cycles when cross-functional business and technology teams use agile principles to tackle a tightly scoped set of problems and give users working functionality. Through an iterative sequence of such digital sprints, leading PE firms find that they can deliver higher returns on their IT investments, and at lower risk—a trade worth making.

Digital effectiveness is a rare competitive advantage for GPs today. We expect that before long, it will be a competitive necessity. Initiating a digital transformation is therefore increasingly a top-of-house priority for many GPs—critical to maintaining their distinctiveness and improving their ability to serve clients.

[1] The survey was conducted in January through March 2018. Ten GPs had assets under management (AUM) of $10 billion or less; 14 had more. The mean AUM was $32 billion.

[2] Jacques Bughin, Laura LaBerge, and Anette Melbye, "The case for digital reinvention," *McKinsey Quarterly,* February 2017, McKinsey.com.

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Digital procurement in private equity: Unlocking sustainable impact

Best practice purchasing is now an even more potent source of value creation for private equity leaders.

Gianmarco Cilento, Andrew Mullin, and Michael Wise

A careful review of purchasing is typically part of any private equity (PE) playbook, with procurement savings factoring prominently into 100-day and longer-term business plans. As part of the process, procurement professionals are typically charged with finding and acting on low-hanging opportunities like requesting price reductions and volume discounts from suppliers. Leading PE firms are adopting a more comprehensive and transformative approach, powered by new digital and analytical tools, that can lift earnings before interest, taxes, depreciation, and amortization (EBITDA) by 20 percent within six months. These tools, combined with the right approach and methodologies, enable rapid sizing and capturing of the opportunity, permanently changing the way investment and management teams look at procurement and other aspects of operations.

In this article, we will describe the new approach, focusing specifically on the impact that digital tools, advanced analytics, and new methodologies have had on midsize-portfolio companies in a variety of industrial sectors.

Digital tools and advanced analytics

Pragmatic use of new digital and analytical tools can support a step change in supply-chain performance by enabling three key activities: creating transparency into procurable spending, identifying value potential, and supporting value capture.

Creating transparency through advanced spending intelligence

A common challenge for many midsize companies is knowing precisely on what and with whom they spend their money. Fragmented and incomplete data and multiple, unconnected sources of information can make it challenging to determine a spending baseline, identify areas of opportunity, and track impact.

Many professionals believe that getting better data requires significant investment of time and money in new IT systems. However, new digital solutions allow companies to make sense of dispersed, partial, and often incorrect spending data in just a few weeks. They can patch together disparate software systems, extract data from both internal and external sources, cleanse them, and intelligently categorize them in sufficient detail to provide a "single source of truth" for external spending.

Procurement professionals can use this data set to perform a wide range of analytical exercises to identify areas of opportunity. For example, they can look for pricing or specification discrepancies between different plants or divisions, excessive spending fragmentation, and disconnects between raw-material prices and commodity-market indexes—all are markers of opportunity that should be further investigated and transformed into cost-saving initiatives. Exhibit 1 illustrates how a web-based tool can collate and clean data and offer several useful analyses in each category of a company's spending.

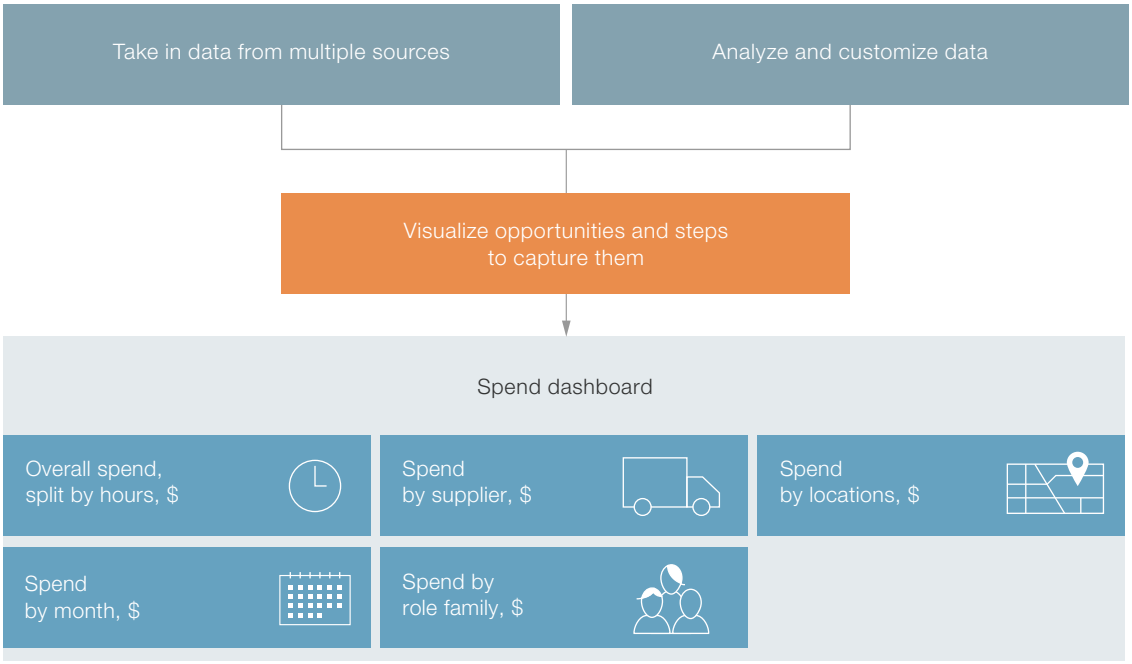
Identifying value potential

Knowledge and insights are power—a truism, of course, but in procurement, superior knowledge is vital. Insights into high-spend categories will help companies set the appropriate level of ambition (savings targets) and capture the full EBITDA potential. In our experience, the traditional commercial levers, such as sending out requests for proposals (RFPs), negotiating with incumbents, developing new suppliers, and so on, capture less than half of the potential. Claiming full value requires looking beyond price and into noncommercial levers, such as product design, raw-materials specifications, demand and usage management, and processes. In doing so, procurement professionals can rely on a number of digital solutions to drastically simplify value identification and improve the accuracy of savings estimates. New advanced-analytics tools used by midsize PE portfolio companies include the following:

- Online design-to-value tools, e-cleansheet solutions, and 3-D printers. Successfully deployed, these tools dramatically reduce the

Exhibit 1 **New reporting tools offer dynamic insights into key spending characteristics.**

How 1 tool produces a spending dashboard



time and cost traditionally associated with design and specification changes. The insights generated have empowered procurement teams to negotiate on the basis of optimized product features. Typical impact is 15 to 30 percent of historical procurement costs. Exhibit 2 shows a simplified cleansheet analyzing temporary-labor costs.

- Logistics and inventory-optimization tools. Companies with significant logistics and inventory costs such as freight and warehousing can optimize their footprint and logistic network, permanently reducing their internal and external logistic spending. Typical reduction in total logistics cost is 10 to 20 percent—and that is before renegotiating with suppliers on the basis of an optimized network. Exhibit 3 shows an example of how new tools can cut freight costs through shorter trips, increased utilization, and route optimization.

- Back-office process-automation tools. Companies with significant back-office spending (on both procured services and labor) can realize considerable savings by automating and speeding up processes, typically 20 to 30 percent of general and administrative costs. A robotic-process-automation system can extract, clean, and consolidate data from multiple source systems. Other tools then improve the management of end-to-end work flow and handoffs between people and bots, automating many processes and shortening cycle times. Exhibit 4 shows an example of a reporting process in which most steps were automated, cutting overall time in half.

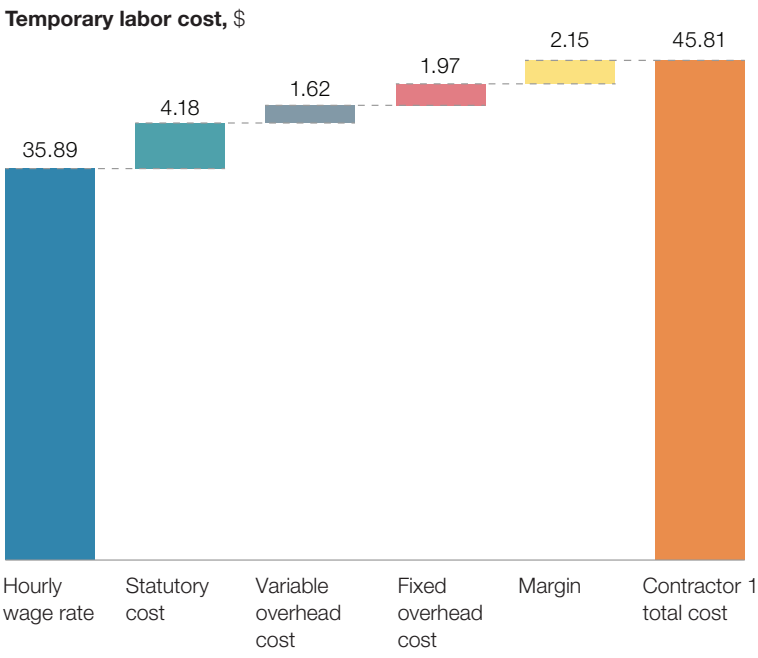
Exhibit 2 **A cleansheet tool helps users build their own model of costs.**

Example

To estimate US temporary labor costs, the user enters the following information:

- Geography (state and city)
- Statutory expenses (Social Security, Medicare, workers' compensation, etc)
- Variable expenses (recruiting, account management, drug testing, etc)
- Fixed costs (management, rent, utilities, payroll, software, etc)

The tool produces a complete estimate of a supplier's costs

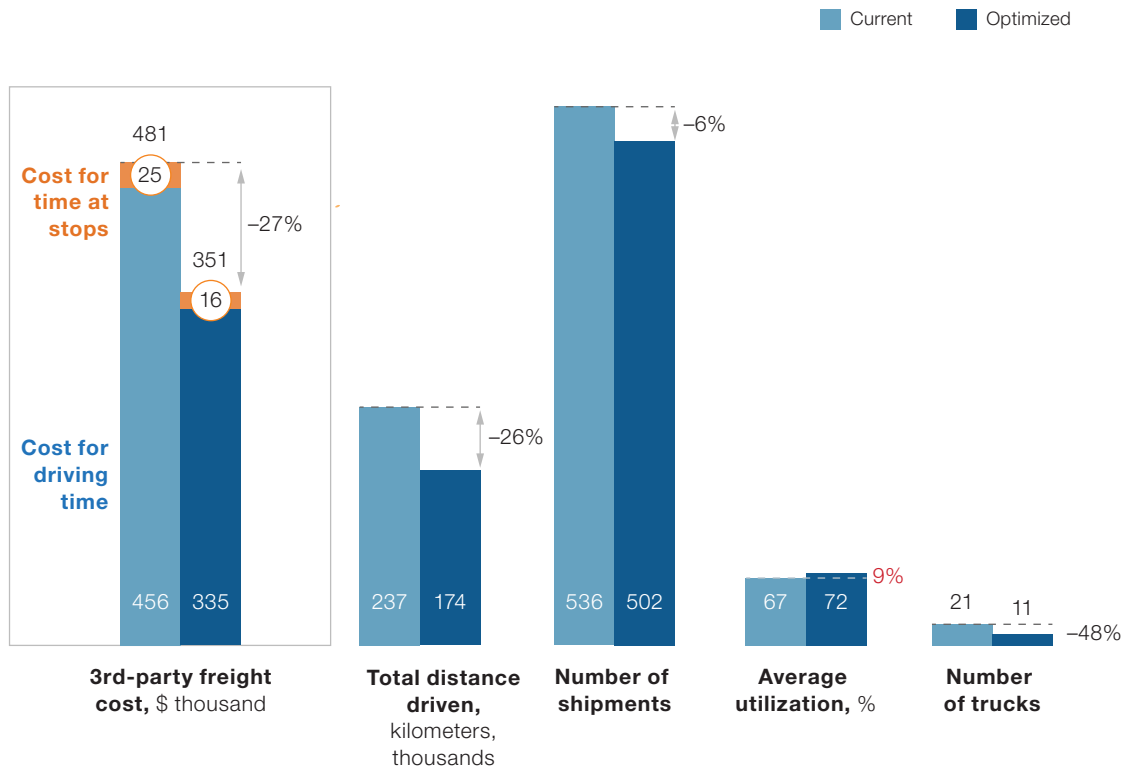


Supporting value capture with e-sourcing tools

While not new, the latest electronic sourcing tools, such as e-RFPs, e-catalogs, and e-auctions, let purchasing teams reach more vendors and conduct more detailed, broader sourcing events in a fraction of the time of traditional RFPs. If used pragmatically, these technologies let companies execute more sourcing events, with increased competition and transparency, compressing into days or weeks the work that would typically take procurement professionals years to execute.

Companies with significant back-office spending ... can realize considerable savings by automating and speeding up processes, typically 20 to 30 percent of general and administrative costs.

Exhibit 3 **One company found an opportunity to cut third-party freight costs by 27 percent using a digital transportation-management tool to optimize routes.**



Four elements of success

Leveraging digital tools is not enough to create step changes in financial performance. Leading firms pair new technologies with an approach based on four practices:

- setting ambitious targets
- mobilizing cross-functional teams including top management
- committing to total cost of ownership
- focusing relentlessly on execution

Setting ambitious targets

Once total savings potential is identified through advanced spending intelligence, it is easier to set an ambitious target. Rather than just a target percentage or dollar amount—though those are important—PE investors should ensure that the actual procurement savings potential is reflected in the business plan of each portfolio company. In our experience, after a quick diagnostic (two to three weeks), it is not unreasonable to expect a total procurement target of 10 to 20 percent of EBITDA.

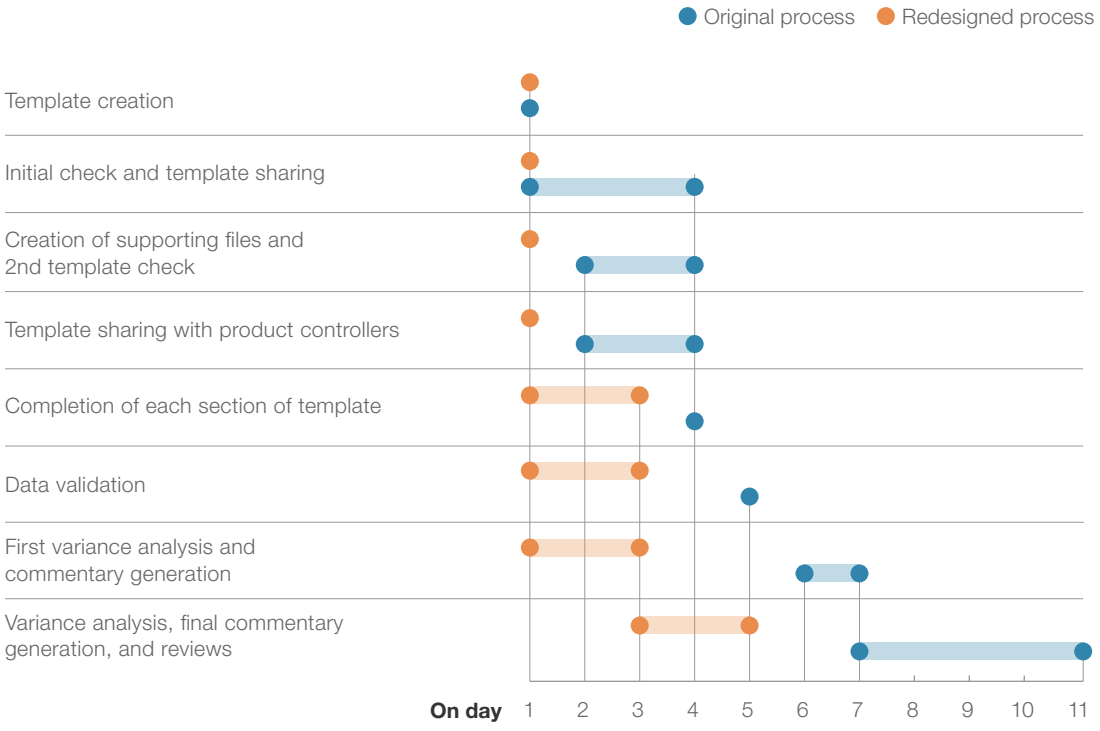
Exhibit 4 **Process automation can cut up to 30 percent of general and administrative costs.**

A finance organization with 600 professionals automated its record-to-report process. It took the following steps:

- studied the potential for automation using currently available technologies
- used robotic process automation to extract, clean, and consolidate data from 10+ source systems
- used a business-process management tool to manage end-to-end work flow and handoffs between people and bots

Identified impact

- 20–30% reduction in general and administrative costs
- Faster process (eg, some reports that once took 5 days to build manually can now be produced in 1 hour)



High aspirations frequently lead to high achievement. A thoughtful stretch target can challenge an organization's underlying mind-sets and assumptions. It pushes the team to collaborate as never before and to develop novel ways of solving problems. CEOs, CFOs, and business-unit leaders should also visibly commit to the targets and pledge their time and energy to supporting the working team.

Mobilizing cross-functional teams including top management

Any initiative led and conducted solely by the procurement function is destined to underperform. It is crucial to pull high-level talent from across the organization to drive and support the effort. Experts from finance, operations, sales, engineering, and manufacturing will bring broader expertise to the challenge at hand, allowing the team to see more issues and create better, faster solutions. These teams are further empowered by clear definitions of roles, decision-making responsibilities, and a plan and venue to escalate issues that cannot be solved by the team.

Committing to total cost of ownership

More than half of all procurement savings potential typically comes from noncommercial levers. As such, any value-capture effort that has the objective of capturing the full potential opportunity has to be centered on the idea of total cost of ownership. New digital and advanced-analytics tools can make it easier and faster to look beyond price to identify opportunities in design, specification, usage, and process.

Focusing relentlessly on execution

Progress on initiatives should be reported to executives at least biweekly to drive momentum and urgency, and to ensure timely decision making. Promising initiatives frequently die on the vine because "we've never done that before" or "we know the business will say no." Engaging frequently with the appropriate stakeholders sustains the momentum necessary to drive change through the organization.

It's important to note that initiatives don't happen all at once, or at the same pace. To engage the organization in the process, companies should establish stage gates to assign initiative owners, validate potential savings, and then quickly plan and provide resources for them through execution. Successful teams frequently set up war rooms where they can track initiatives visually. They identify obstacles to completion, resolve them when they can, and escalate them when they can't through frequent periodic updates with top management.

■ ■ ■

In an increasingly competitive investing and operating environment, driving outsize performance in procurement can be the difference between exceeding investment targets and falling short. A successful procurement transformation can increase run-rate EBITDA by up to 20 percent and make an even larger impact on enterprise value. Furthermore, substantial and near-immediate improvement in cash flow can enable greater financial flexibility and investment elsewhere. ■

Gianmarco Cilento is an associate partner in McKinsey's Miami office, **Andrew Mullin** is a partner in the Toronto office, and **Michael Wise** is a consultant in the Southern California office.

The automotive ecosystem shifts into gear

An analysis of mobility investments reveals how technologies and players are beginning to interact, and where new opportunities are starting to appear.

Matthias Kässer, Thibaut Müller, and Andreas Tschiesner

As digitization reshapes traditional industry boundaries, many are betting that an "automotive ecosystem" will be one of the first to develop. But what will it look like in practice, and how will we know when such a competitive shift really takes place?

As we have described before,[1] the coming ecosystems will comprise diverse players that provide digitally accessed, multi-industry solutions based on emerging technologies. In automotive, four such technologies known by the acronym ACES—autonomous driving, connected to the Internet of Things, electric, and shared mobility—are likely to be key. A constellation of different players, including OEMs and their suppliers, competing "frenemies," and unexpected attackers, will aim to capture the opportunities these and other innovations will present.

Thanks to the findings of the Start-up and Investment Landscape Analysis (SILA), McKinsey's proprietary, self-optimizing big data engine, we can now paint a more detailed picture of the evolving battleground. Through SILA's semantic analysis of keywords and network analytics of relevant companies, clusters, and industry moves within the investment landscape, we identified ten technology clusters with more than a thousand companies combined that have received external investments since 2010 of about $111 billion. This figure does not include internal R&D expenses by automotive and technology companies, but it does include acquisitions and stakes in other businesses made by these companies.

In the past decade, the rate of mobility investments has increased nearly sixfold, and the median deal size has more than tripled. In 2016 alone, investments amounted to $31 billion, a little less than half of the total R&D spend by all automotive OEMs ($77 billion). Around 60 percent of the total investment volume went into very large, industry-shaping deals, whereas the rest went into a huge number of smaller deals. Notably, these investments were focused not on products but on the technologies underlying the changes in mobility. In other words, investors are betting on an ecosystem.

No less compelling is the evidence as to who the investors are. More than 90 percent of the investments identified by SILA have been made by tech companies, on the one hand, and venture-capital (VC) and private equity (PE) firms on the other. These two sectors are investing about equal amounts (that is, slightly more than 45 percent of the total investments); OEMs and major suppliers make up the remainder. And while VC and PE firms are making these investments because they expect significant growth and will likely look to exit in the foreseeable future, tech companies seem intent on staying put—staking out emerging control points and getting ahead of critical trends.

Our SILA analysis shows ten major clusters based on the four ACES technologies (exhibit). Among these technologies, autonomous driving received the largest amount of funding. Sharing solutions came in second, with around one-third of the funding—surprisingly little, given the media attention. In both areas, the investments were dominated by a few large investments in major companies (for example, Didi, Mobileye, and Uber); autonomous driving also had a long tail of smaller investments in technology start-ups.

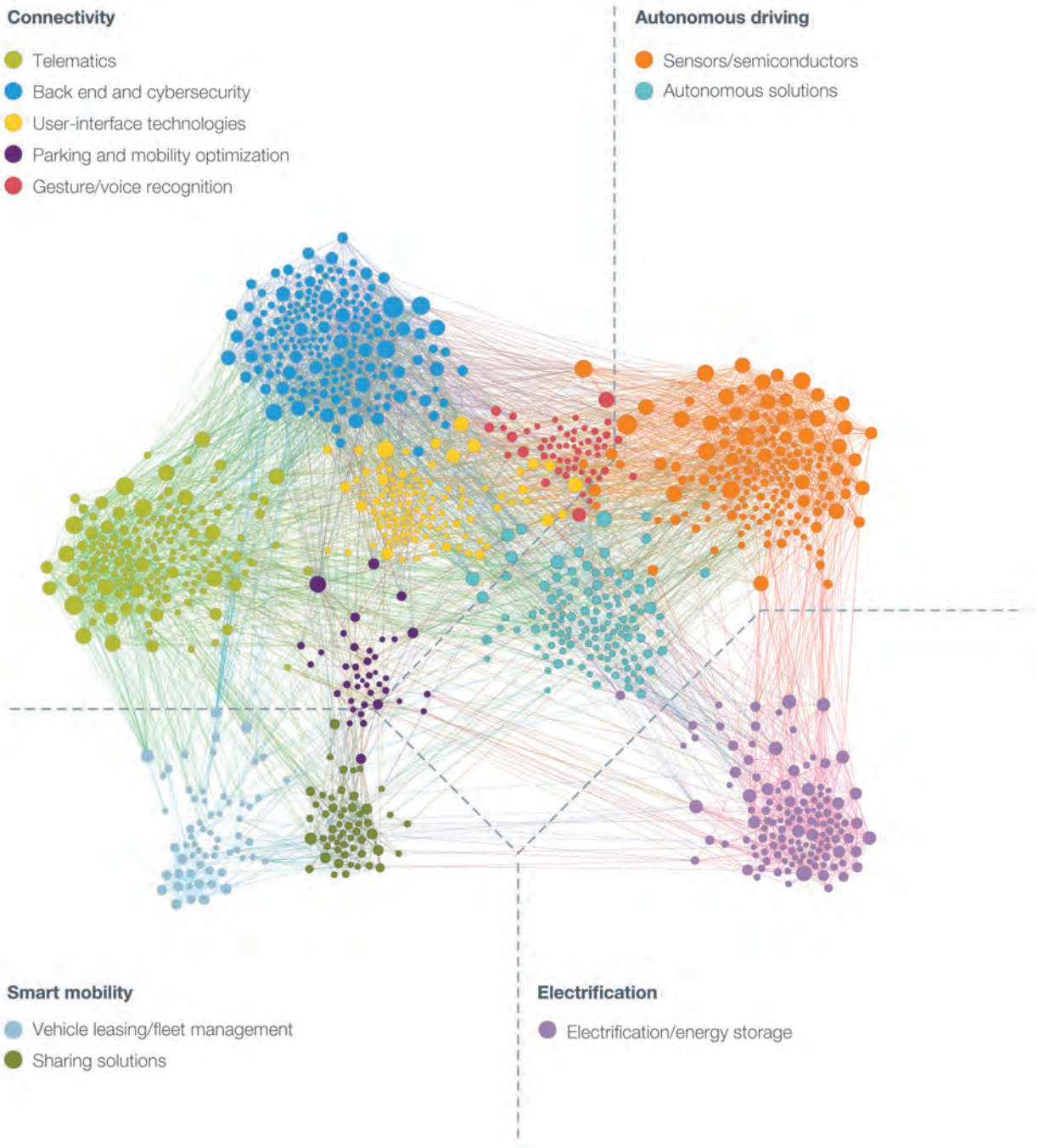
The picture is very different in the connectivity cluster, where investments have focused almost entirely on specialized small and midsize companies. Electrification and energy-storage investments are smaller than investments in other technologies, most likely because automotive companies are investing in these technologies in-house.

The analysis also reveals strong links among the different ACES clusters (as shown by their proximity on the node map), which emphasizes the underlying technologies' wide-ranging applicability. For example, machine learning is the underlying technology for

Exhibit

Mapping mobility start-ups and investments in the evolving automotive ecosystem shows activities across ten clusters.

10 clusters loosely categorized into 4 areas, includes >1,000 companies with investments of ~$111 billion, 2010–17



Source: Capital IQ; PitchBook Data; McKinsey Center for Future Mobility

both autonomous driving and voice-recognition software, among others. This suggests that companies should consider opportunities in light of the technology to be used rather than the offerings to be developed.

Not surprisingly, more than half of the start-ups receiving investment are based in the United States, which leads both in the number of companies and in investment volumes. China follows and Europe lags well behind. But as the SILA data show, a mobility ecosystem is quickly taking shape across the world. And this ecosystem is more than just "Automotive Industry 2.0." Leading in the new landscape will require contending with multiple new players—many not from a traditional automotive background—and integrating different capabilities. For traditional OEMs and suppliers, as well as new entrants, it will be essential to adopt an ecosystem mind-set. ■

[1] See Venkat Atluri, Miklós Dietz, and Nicolaus Henke, "Competing in a world of sectors without borders," *McKinsey Quarterly*, July 2017, McKinsey.com.

Matthias Kässer is a partner in McKinsey's Munich office, where **Andreas Tschiesner** is a senior partner; **Thibaut Müller** is a consultant in the Geneva office.

The authors wish to thank the McKinsey Center for Future Mobility (MCFM) for its contributions to this article. For more information about MCFM, visit McKinsey.com/mcfm.

Talent management at BlackRock: A conversation with Larry Fink

The most important component of good management is ensuring “diversity of mind,” says the CEO of the world’s largest asset manager.

Since cofounding BlackRock in the late 1980s, Larry Fink has led the company to become the world's largest asset manager, with more than $6 trillion assets under management and 13,000 employees globally. A background in risk management gives him a unique perspective on the risks and rewards related to talent.

"Firms fail when you have group think. You generally have group think when you have replicants all around you," he says.

In this February 2018 interview with McKinsey Publishing's Rik Kirkland, Fink discusses the role played by BlackRock's board in maintaining a strong leadership pipeline and how analytics helps ensure diversity on multiple dimensions across the company. An edited transcript of Fink's remarks follows.

The role of the board in talent management

Our board today spends a day and a half every year on reviewing talent in every one of our businesses. It is in the hundreds of people—we're talking about every business, and the business leader has to review his or her talent. They have to talk about who would be next in line if we move that leader to another division or if that leader was hit by the proverbial bus.

We have the board reviewing the young talent that we should be focused on over the next five years, the next three years, or the next one year. Then we compare and contrast these presentations with presentations from the year before, and the year before that, to create accountability. So, if somebody was on the list to be next in line and he or she is no longer on the list—why?

The board's role is very interactive, and it is very involved. It creates better accountability at the firm level. And this is why I love being a public company. Most people don't talk about that. I actually love being a public company because this process of board oversight forces stronger behaviors.

Diversity of mind

Not only are we looking for the best-quality person in a role, we are reviewing gender and the composition of our team in terms of culture, ethnicity, and race. I think one of the areas of diversity that we don't talk enough about is diversity of mind.

It's very easy to see across a business and ask, how many women are there? What's the gender mix? It's very easy to see if there is a diverse group of men and women with diversity of race. We don't spend enough

"I actually love being a public company because this process of board oversight forces stronger behaviors."

time asking: Do we have an organization with diversity of mind? I think this is where most companies fall down.

People who are engineers like to be around other engineers. People with a background in political theory are generally around other people in political theory. People who have an affinity with one political party or another are generally friends with people in that political party. There are so many places where you see congregations of people around ideals, around education, around race. We have to break that down. Firms fail when you have group think. You generally have group think when you have replicants all around you.

The most important component of good management, good leadership, and good stewardship is making sure that you have diversity of mind. When you recruit young people from different universities—and we generally hire around 400 to 450 young people [a year]—they all can't come from an Ivy League school. You have to start from the foundation that people come from different experiences, and they have different opportunities.

If you don't interview a diverse group of people from different universities, different state schools, and different parts in the world, you are not going to get diversity of mind. If you hire all business majors, all engineers, or all people who have one field of expertise, you're going to fall down.

Using analytics is about trying to making sure you have diversity in the composition of people in mind and in background. Having a more diverse team of people will lead less to group think and more to a diverse conversation. ■

Larry Fink is the chairman and CEO of BlackRock. **Rik Kirkland,** a partner in McKinsey's London office, conducted this interview.

Is big really beautiful? The limits of pension consolidation

Many governments are thinking about merging their disparate systems. New research finds real benefits, but capturing them is difficult.

Eser Keskiner and Robin Matthias

Pension systems face a tough road. Long-term economic growth is slowing, pulling down returns, and political uncertainty is high. Funding levels have deteriorated, and despite recent improvements, pension funds will continue to be under pressure as beneficiaries live longer. Regulators are sharpening their focus on achieving greater efficiency and effectiveness for the industry.

While defined-benefit (DB) and defined-contribution (DC) schemes around the world are forming different responses to these challenges, there is a common theme in many countries: consolidation. The United Kingdom is pooling the investments of its local pension schemes. The Productivity Commission in Australia is reviewing the competitiveness and efficiency of the country's pension funds, with ongoing focus on subscale funds with poor performance. The Netherlands has already seen the number of its funds fall by 60 percent from 2005 to 2015[1]—and there may be an additional 20 percent reduction in the coming years.[2] In several other parts of Europe, governments are thinking about merging smaller pension schemes into larger plans.

The simplicity of the consolidation argument is appealing: bring smaller funds together and achieve economies of scale, from the back office to investment activities. Everybody wins—or so it would seem. After all, some of the largest pension funds tend to have high investment returns as well. For example, the Canadian Pension Plan Investment Board, which manages $350 billion, has achieved average returns of 12 percent annually over the past five years. And the Dutch pension fund ABP, with $550 billion under management, has achieved average returns of 8 percent per year over the same period.

In this article, we test the three most common arguments made in favor of consolidation: that it will result in better investment performance, lower costs, and stronger governance and organizational health. What we find is that while there is merit to all three arguments, economies of scale do not automatically translate to "economies of consolidation," as numerous pitfalls can let the benefits slip away. Pension systems that want to achieve synergies through consolidation need to integrate funds carefully, using a few essential best practices: develop a clear target model that articulates the drivers of value, don't let politics interfere with a focus on value creation, ensure effective decision making, keep the integration moving quickly, and reduce uncertainty for employees and members as quickly as possible.

Argument 1: Scale drives better investment returns

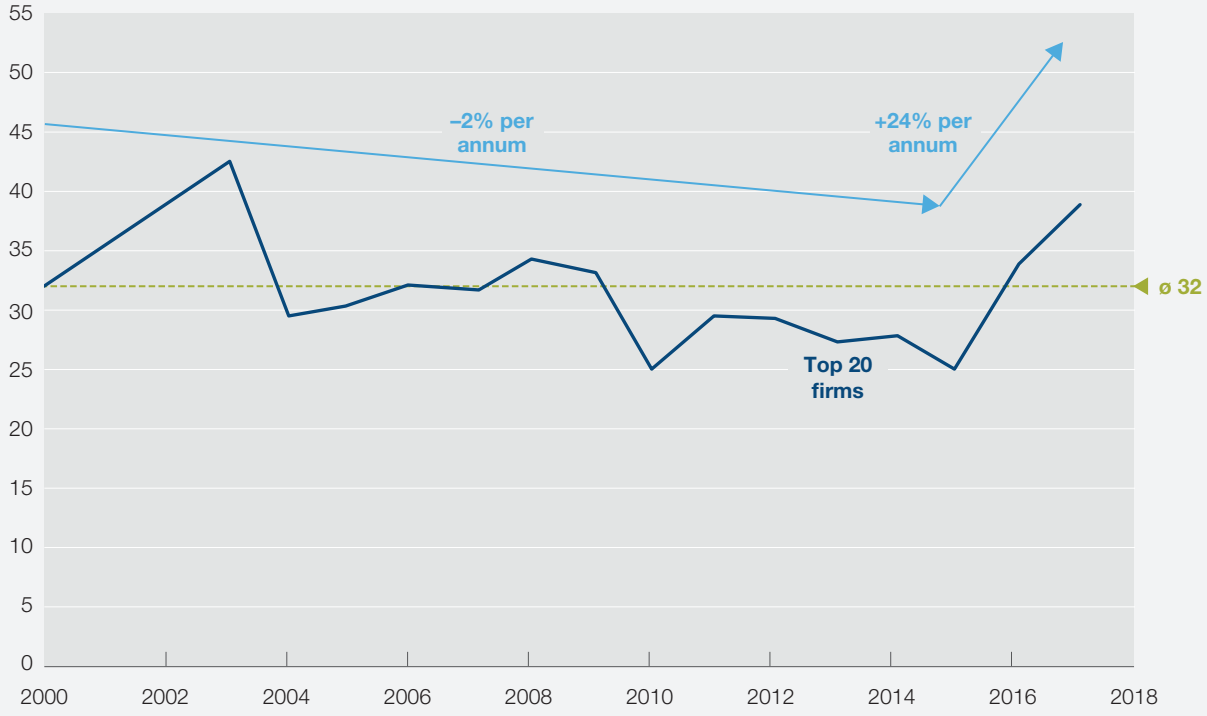
Some believe that larger pension funds should generate higher gross investment returns, reasoning that larger funds have better access to the most attractive opportunities, many of them in illiquid asset classes and available only through preferential treatment by the most successful external managers. With more investors and capital rushing into private equity (PE) and other private markets, access to these attractive investment opportunities (and the most successful external managers) will become increasingly difficult to achieve. Already, investors find it "hard to get [their] money in the door."[3] The most successful managers can afford to work only with the largest investors that can make significant commitments, thereby reducing their administrative burden and saving costs.

Our recent research shows some evidence for the theory that investors are gravitating toward the biggest managers. The largest private market firms are beginning (but only just) to claim a larger share of fundraising (Exhibit 1).[4]

Our research also finds that the largest funds have recently outperformed smaller funds, with less variation between top- and bottom-quartile performance than that observed among smaller funds (Exhibit 2). It seems that if a pension successfully places its capital in one of these megafunds—which is

Exhibit 1 **Big firms' share of fundraising has increased since 2015.**

Fundraising market share across all asset classes, top 20 private market firms, %



Source: Preqin; McKinsey analysis

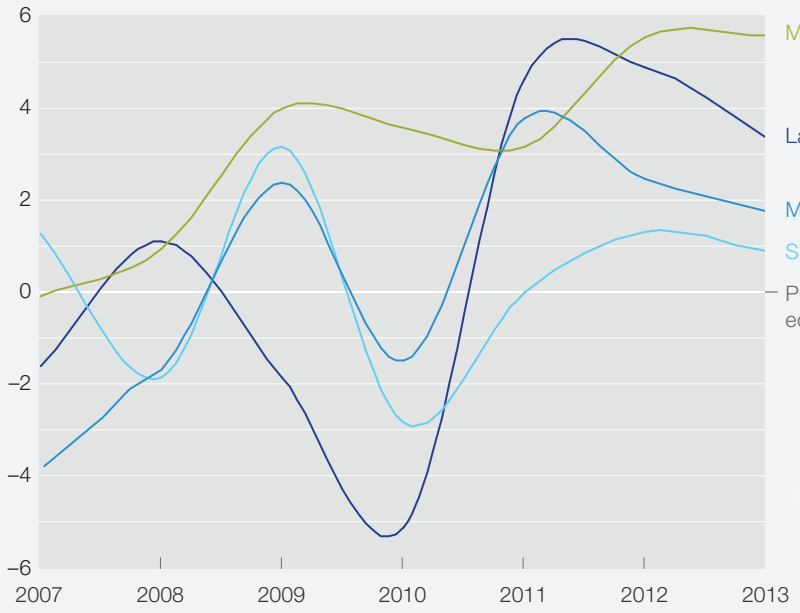
not easy to do—it will gain access to a better collection of deals, ones that, for the moment, are generating superior returns.

But other research suggests that smaller pension funds can do just as well as larger ones. CEM Benchmarking (a strategic partner of McKinsey) analyzed the investment performance of 49 US pension funds from 2010 to 2015[5] and found almost no correlation between fund size and achieved gross investment returns (Exhibit 3). In fact, differences in scale explained only 4 percent of the difference in gross returns. It appears that smaller funds can hold their own, despite their lesser ability to place capital with the largest managers.

How do they do it? If returns are similar for smaller and larger pension funds, it seems that they have equal access to the asset classes that have performed well—which has often meant alternative assets. An analysis of the PE allocations of large and small pension funds, for example, shows no indication that large "ticket sizes" are a must for participation in this asset class. The PE allocations of the smallest funds (those with total assets under management [AUM] between $1 billion and $5 billion) are not significantly different from those of the largest funds (those with total AUM more than $50 billion) (Exhibit 4). Even at ticket sizes as low as $50 million, smaller pension funds are able to gain access to this diverse and competitive asset

Exhibit 2 **Measured by pooled returns, megafunds have outperformed since 2008.**

Global private equity pooled returns by fund size relative to public-market equivalent, percentage points



Top- and bottom-quartile variation from the average, percentage points

Megafunds	±3.2
Large-cap funds	±5.0
Mid-cap funds	±5.5
Small-cap funds	±7.3

Source: Cambridge Associates; Thomson One; McKinsey analysis

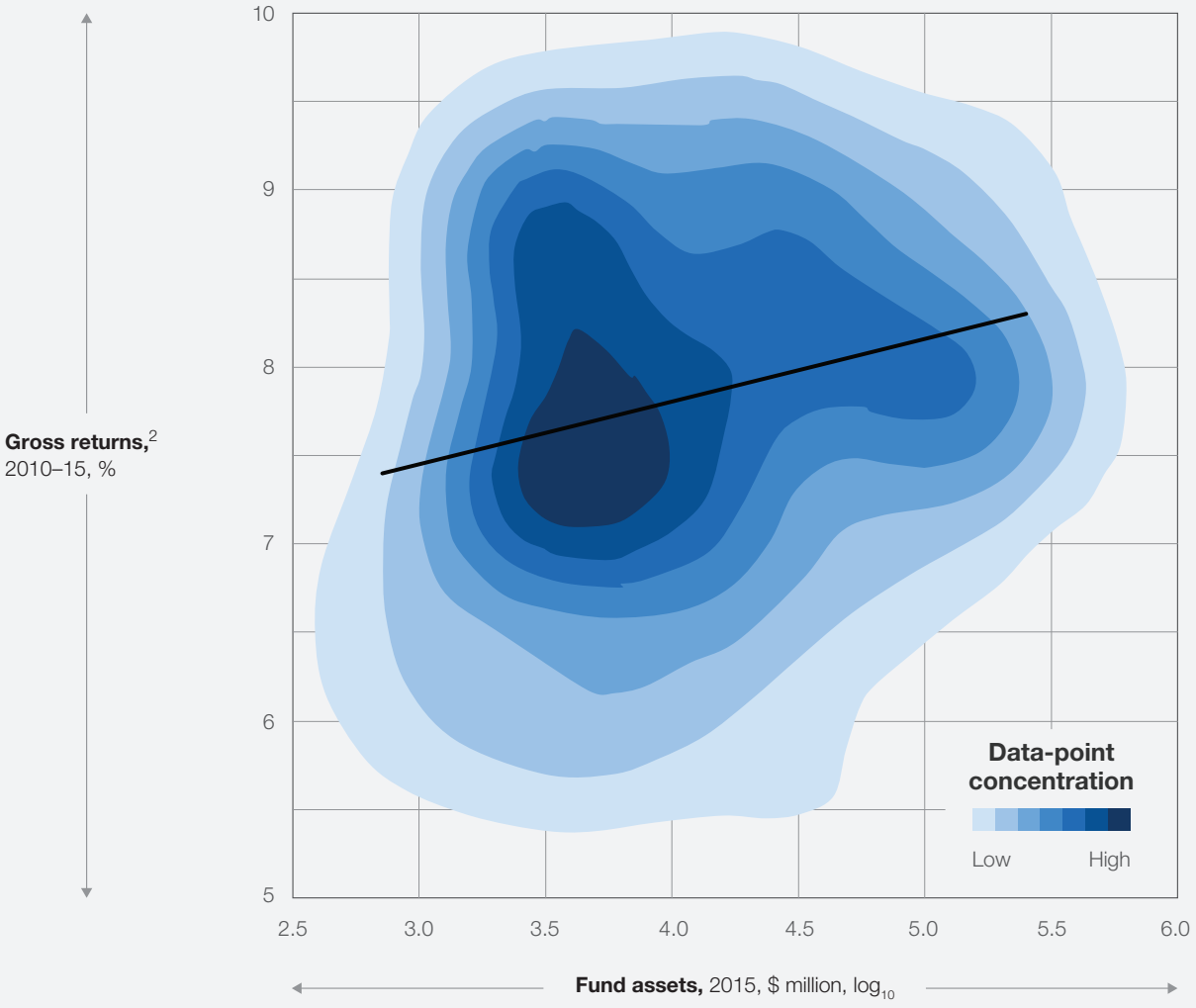
class.[6] (And in the future, the advent of new liquid alternative products should make it even easier for small funds to gain entry.)

This may seem odd, as entering any new asset class requires a minimum level of commitment that will make the required investments for research and building a new team worthwhile. And such a minimum commitment will always be easier for funds operating at larger scale. However, the answer lies in the pension fund's preferred implementation style (or the choice between internal and external management) and the scope and complexity of the planned investment strategy. Building an internal team of investment professionals to make direct investments in global infrastructure, say, will require a sizeable investment and is open only to pension funds of a certain size. But investing with a small set of highly reputable PE managers requires fewer resources and is easier to do, even for smaller funds.

So, it appears that both large and small pension funds enjoy access to illiquid asset classes whose returns have been greater than those in public markets. And analyses by CEM Benchmarking suggest that size differences explain only a very small part of the observed differences in investment returns. If current trends continue, and larger private market funds outperform smaller ones, and access to these outperforming large funds becomes increasingly complicated to secure, our findings might change. But at the moment there seems to be little merit in the

Exhibit 3 **Gross returns show no correlation with fund size.**

US pension funds,[1] gross returns vs fund assets



Note: The proportion or percentage of variance explained by a regression is 4%.

[1] n = 49.

[2] y = 0.30x + 6.42.

argument that greater scale per se drives higher gross investment returns.

Argument 2: Scale lowers costs

The second key argument for consolidation is that larger scale will drive down average costs per participant for both administration and investment management. Again, the logic is intuitive, and the underlying reasons also sound compelling. Across the whole business system, greater scale should allow for more efficient operational processes, and scalable IT platforms should save money. Greater scale should

provide stronger negotiating power with third parties, such as pension administrators, fiduciary managers, investment consultants, and external asset managers.

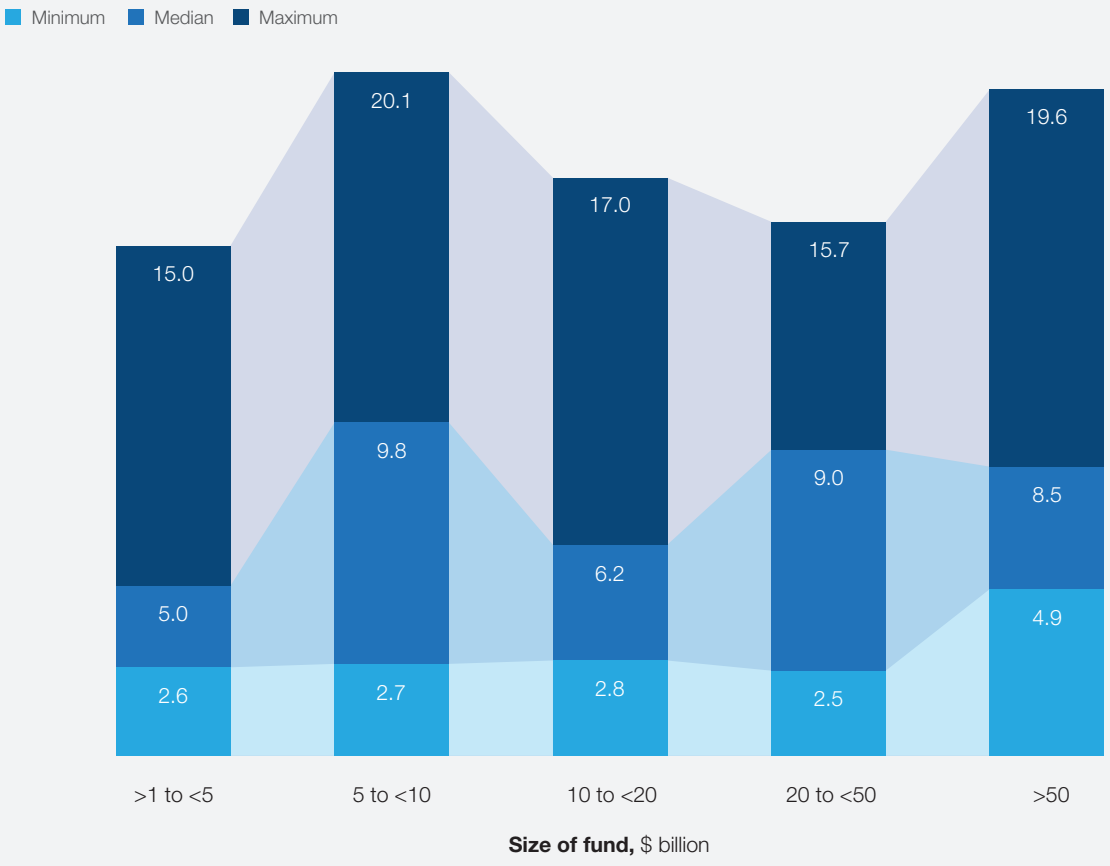
Even more powerful, at-scale pension funds can move some of these third-party activities, notably investment management, in-house and thus significantly reduce their costs. That idea has gained particular prominence with investors' increasing allocations to alternative and illiquid investments. We have seen that smaller funds can gain effective access to alternative assets, which allows them to capture comparable gross investment returns. But can they do so in a cost-efficient way? Or do they end up with lower net investment returns than their larger competitors, because they incur higher costs? Many proponents of consolidation claim that bringing investment management in-house will yield significant savings, particularly in private markets.

Does scale lower costs? Here, our findings are more conclusive and encouraging than they are in the first argument. For administration costs, which, on

Exhibit 4

Allocations to private equity do not vary much by size of fund.

Allocations to private equity, defined-benefit pension funds[1] in United States, 2016, %



[1] Based on defined-benefit pension funds with funds under management >$1 billion with allocation to private equity.

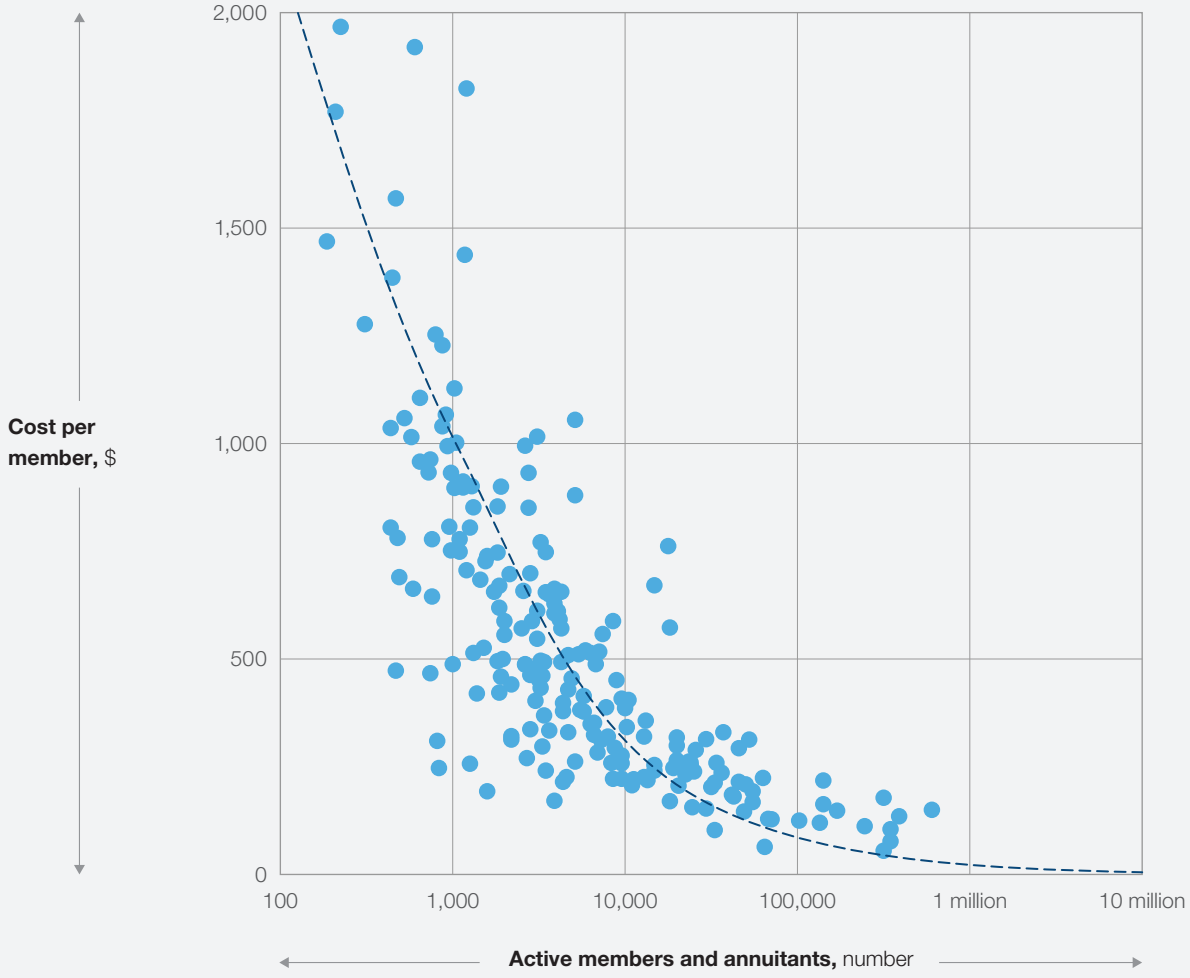
Source: *Pensions & Investments*; McKinsey analysis

average, account for roughly 10 to 15 percent of the total, CEM Benchmarking finds clear evidence of economies of scale. In a 2018 analysis covering 280 DB plans[7] ranging from tiny (27 active members) to large (nearly six million active members), it found that for every tenfold increase in the number of fund members, administration costs per active member decrease by 61 percent (Exhibit 5).

For investment costs, there are also clear advantages for larger funds. However, these seem to result less from greater scale in processes and systems and more from use of more cost-efficient management and implementation practices. As funds get larger, they tend to shift to more cost-efficient implementation styles—for example, by avoiding fund-of-fund vehicles and increasing the share of internally managed assets

Exhibit 5 **Scale clearly lowers administrative costs at pensions.**

Pension administration, cost per member vs active members



Source: CEM Benchmarking

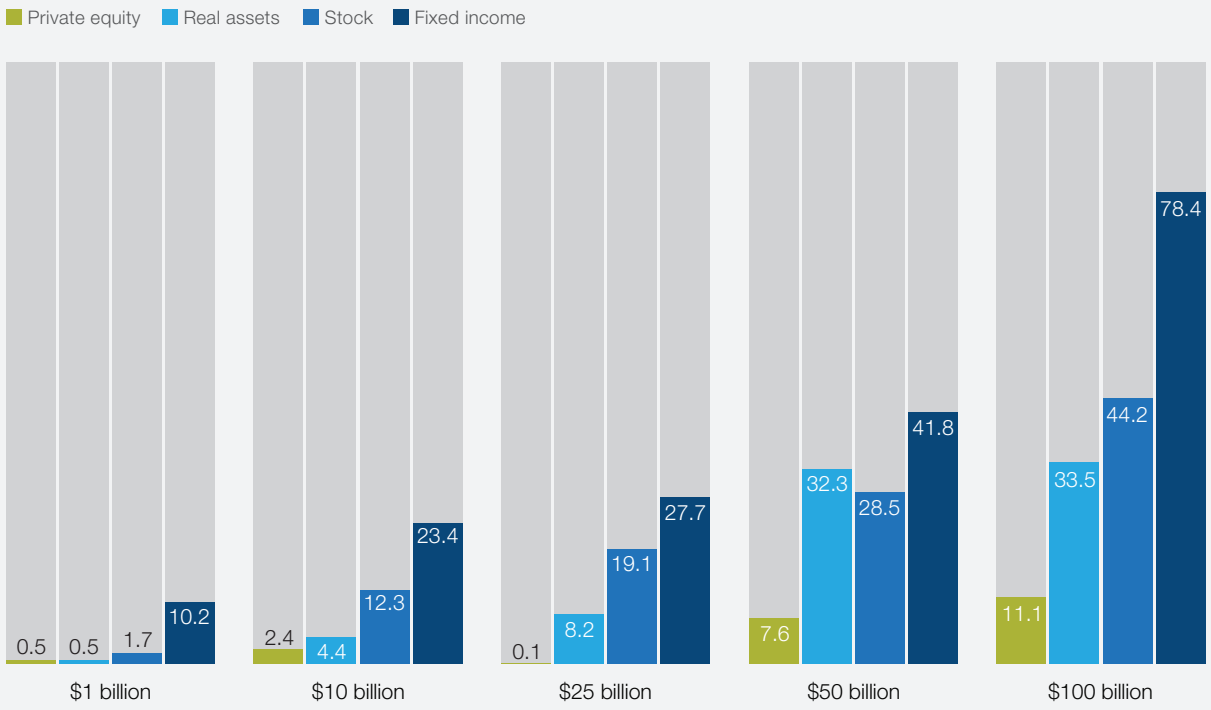
(Exhibit 6). These savings are particularly meaningful in alternatives.

Using the proportions of investment management performed internally and externally that are typical of funds of different sizes,[8] we can calculate investment costs for a hypothetical allocation (Exhibit 7). We see a progressive cost advantage as funds get larger. A $100 billion fund that manages a typical portion of its portfolio internally saves 28 basis points (worth $280 million) compared with a $1 billion fund.

In sum, we see strong evidence that larger scale yields cost savings in both administration and investment management. Capturing them is neither automatic nor guaranteed, however. Administrative savings are slightly easier to achieve as a fund grows in scale. Investment-management savings, by far the larger of the two, require more comprehensive change. Pension funds need to make a conscious decision about their implementation style if they are to realize these potential savings.

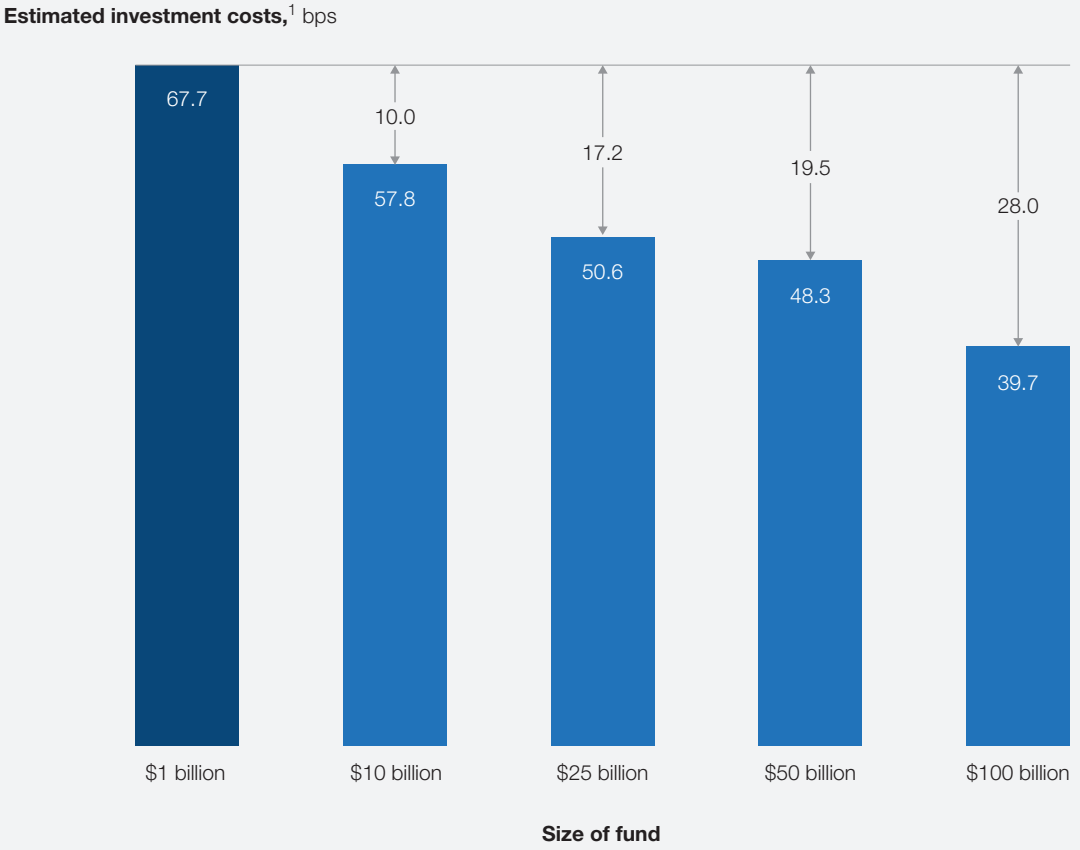
Making the decision about the most effective management approach and practices for running the fund can be tough. And doing more work in-house also requires building up additional skills, which can be anything but trivial for an industry that still largely

Exhibit 6 **Larger pension systems manage more assets in-house.**



Source: CEM Benchmarking; McKinsey analysis

Exhibit 7 **$100 billion funds save 28 basis points on investment costs compared with $1 billion peers.**



Note: Numbers may not sum, because of rounding.

[1] Hypothetical portfolio allocation: 46% equities, 38% bonds, 8% real estate, 4% hedge funds, 4% private equity. Analysis assumes that a typical portion of the portfolio for each fund size is internally managed.

Source: McKinsey analysis

relies on third parties for many of its key activities. For example, moving the management of additional asset classes in-house would require adding primary and secondary due diligence, deal structuring and execution, portfolio-company management, and, in some cases, deal-sourcing capabilities. None of these are easy to do and would require a carefully planned and executed strategy to deliver the expected benefits.

Argument 3: Scale improves governance and health

The proponents of consolidation also argue that larger funds can more easily establish stronger fund-governance practices, which reduce risks and therefore (all other things being equal) increase risk-adjusted returns. Larger funds, the thinking goes, can invest more heavily in professional risk management and oversight. They can build better capabilities to

monitor and respond to changing regulations. And they can attract and retain stronger talent across all parts of their organization, from more professional, full-time pension trustees to high-caliber investment and oversight professionals.

An extensive body of research confirms that better governance is worth pursuing. Among others, Keith Ambachtsheer, in *Pension Revolution: A Solution to the Pensions Crisis* (John Wiley & Sons, 2007), showed that good governance could drive up to 1 percent of fund value per year,[9] and Gordon Clark and Roger Unwin showed that pension funds with good governance delivered two percentage points of additional return over their benchmarks.[10]

We do not have evidence that larger funds are better at governance. However, astute observers have noted that there is greater variability in governance among smaller funds. The British Pension Regulator, for example, finds that smaller funds "tend to display poorer governance standards, for instance they place less focus on training arrangements, regular board assessments, effective internal controls and oversight of third parties," and that "significant issues also remain among DB schemes, in particular around integrated risk management."[11]

Our experience bears out this idea of greater variability among smaller funds—in both directions. We have seen several smaller funds that have established better governance processes than some of the larger funds. For example, the use of debiasing mechanisms at the investment-committee level does not require scale, and some smaller funds are using the techniques effectively. Our recent research with two active investment managers showed that about 30 percent of selling decisions were timed poorly, driven by biases such as the endowment effect, overconfidence, and loss aversion. Using debiasing techniques, such as conducting a "premortem" on investment decisions and assigning two independent groups to represent pro and counter perspectives, can significantly improve returns. These are not costly to implement and do not require an increase in scale.

When it comes to a broader ability to attract talent, we have seen several smaller funds attract top talent by effectively identifying and communicating their comparative advantages: greater responsibility and independence, wider roles, and more ability to shape the direction of the organization.

The verdict on Argument 3? Partially true. On average, larger funds tend to have better governance, or at least less variability, than smaller funds. However, while governance varies considerably at smaller funds, scale is not necessarily a barrier to reaping organizational benefits.

Other considerations to explore

Occasionally, other concerns crop up when pensions merge. These include the following:

- With greater scale comes greater visibility and scrutiny. Caution might set in, leading to greater conservatism in investment choices, which can affect returns.
- As funds get larger, it becomes increasingly challenging to "move the needle" through investments in asset classes with smaller ticket sizes, such as venture capital. This may lead pension funds to exit these asset classes. Similarly, the funds may get "sized out" by smaller investment managers that pursue certain niches.
- Consolidation may lead to the loss of the unique cultures within individual funds—cultures that may have served as a source of talent attraction and retention. Early-tenure employees especially may find fewer opportunities to take on additional responsibilities and decide to leave.

Can consolidation capture scale benefits?

Overall, we see good reasons to believe that larger pensions enjoy material benefits of scale, especially after fees. And better governance, which larger funds can more easily afford, makes it more likely that they will find such economies. But can consolidation capture them, or are they available only to funds that reached scale organically?

As funds consolidate, their ability to extract the expected benefits will depend on several factors. To begin with, M&A is notoriously difficult. A 2015 McKinsey Global Survey found plenty of executives who said that commercial M&A deals don't always deliver the synergies promised.[12] And three unique characteristics make mergers among pension funds more challenging. First, pension funds are highly regulated entities that guarantee long-term benefits to their members (especially in DB systems). Trustees have a fiduciary duty to members, which means that they should never accept a change in benefit structures that makes members worse off than before. This makes alignment among pension funds complicated, because one side will almost always have to accept a worse position than before.

Second, capturing the benefits in administration cost in a merger can be difficult, because it requires the merging funds either to align their benefit structures or to rely on flexible IT systems that can accommodate the differences. Neither is easy to achieve. Today, few pension funds have technology that is sufficiently flexible to manage two or more disparate plans.

Finally, a merger of pension funds is inherently political. Plan sponsors, trustees, and fund managers have different and conflicting interests. Add regulators, politicians, and labor representatives to the mix, and the result is a complex landscape that favors the status quo and is inimical to change.

Making consolidation work

Consolidation can only be successful with a deliberate approach. A clear strategy and mandate should underlie any merger of pension funds, and system managers should not expect to reap benefits simply by gaining larger scale. In our experience, five success factors determine whether a merger will deliver benefits. (Additional questions sometimes arise. See sidebar, "Other considerations to explore.")

1. Create a target model that clearly articulates the sources of value creation. It is critical to define clearly the extent of the merger, the areas it will cover, and the expected value creation in each function or business area. Pension funds are complex organizations, and combinations of two funds can take different forms. From a merger of back-office functions, or a selective grouping of investment activities, to a full merger of the funds (with aligned governance structures and aligned benefits), different approaches are available. It is critical to be thoughtful about the trade-offs between the expected benefits of each of these approaches and their associated challenges—and to pursue only those strategies for which the benefits will outweigh the challenges.

2. Maintain a rigorous focus on value creation. Once the funds have defined an overarching consolidation strategy and identified sources of value creation, they need to go after these sources without compromise. Experience shows that expected benefits often erode as multiple rounds of negotiations give rise to political compromises. Successful mergers require management to aim high by establishing ambitious value-creation targets at the outset, and to keep up this ambition throughout the whole transformation journey.

3. Ensure effective decision making. In general, merging pension funds are well advised to establish a core group of senior decision makers that drives the integration and that sits outside the management structures of the individual funds. Its members should take full responsibility for delivering against the agreed-upon strategy, and should have full authority to implement the identified value-creation levers. They will need the freedom to take most day-to-day decisions without interference from individual

stakeholders or interest groups—and limit the time-consuming decision making "by committee" that can end up stalling the whole integration process.

4. Build momentum to keep the integration moving. Ambitious timelines and positive momentum are important elements of almost all successful merger projects. If management succeeds in keeping up the speed of the integration process, it typically also finds it easier to safeguard its initial value-creation targets. Very few difficult decisions become easier after they have been postponed several times, but with every round of discussion, the initial ambitions might be watered down. Mergers that tackle the most difficult questions early, on the other hand, typically benefit from the positive momentum created when these roadblocks are removed.

5. Overcommunicate to reduce uncertainty for all stakeholders as quickly as possible. Mergers are times of uncertainty for both employees and fund members. For the employees, uncertainty can manifest itself in loss of productivity and increased attrition. For members—at least in geographies where there is choice—a time of uncertainty would also be a time to consider their options. It is critical for merging funds to put together a clear stakeholder-management plan that covers both employees and fund members and communicates clearly the benefits each stakeholder group will get as a result of the merger.

Can big be beautiful for pension systems? Yes, provided they get the details right. Among other things, they need to define the consolidation mandate clearly and focus relentlessly on execution. It is a conversation worth having, not least because regulators will likely continue to push for efficiency. Pension leaders must evaluate their options and particular circumstances and then make sure that their approach will truly yield the desired benefits.

[1] *Pension Markets in Focus 2016*, Organisation for Economic Co-operation and Development, oecd.org.

[2] *Investment & Pensions Europe*, August 2017.

[3] Javier Espinoza, "Private equity: Flood of cash triggers buyout bubble fears," *Financial Times*, January 23, 2018, ft.com.

[4] The group changes every year, as not every firm raises a fund every year.

[5] For which there were data available for all five years.

[6] While the threshold for access appears low, achieving diversification within the asset class would be more challenging at the lower ticket sizes.

[7] Research covered publicly available data from funds' annual reports and the Global Pension Administration Database by CEM Benchmarking. Of the 280 funds, 218 were Dutch pension funds.

[8] We acknowledge that there are several other contributors to the cost base of a fund. Our example is based on only one component, which is internal versus external management.

[9] Keith P. Ambachtsheer, *Pension Revolution: A Solution to the Pensions Crisis*, Hoboken, NJ: John Wiley & Sons, 2007.

[10] Gordon L. Clark and Roger Unwin, "Best-practice pension fund governance," *Journal of Asset Management*, May 2008, Volume 9, Issue 1, pp. 2–21.

[11] "TPR sets out action to tackle gaps in scheme governance," Pensions Regulator, September 7, 2017, thepensionsregulator.gov.uk.

[12] "How M&A practitioners enable their success," October 2015, McKinsey.com.

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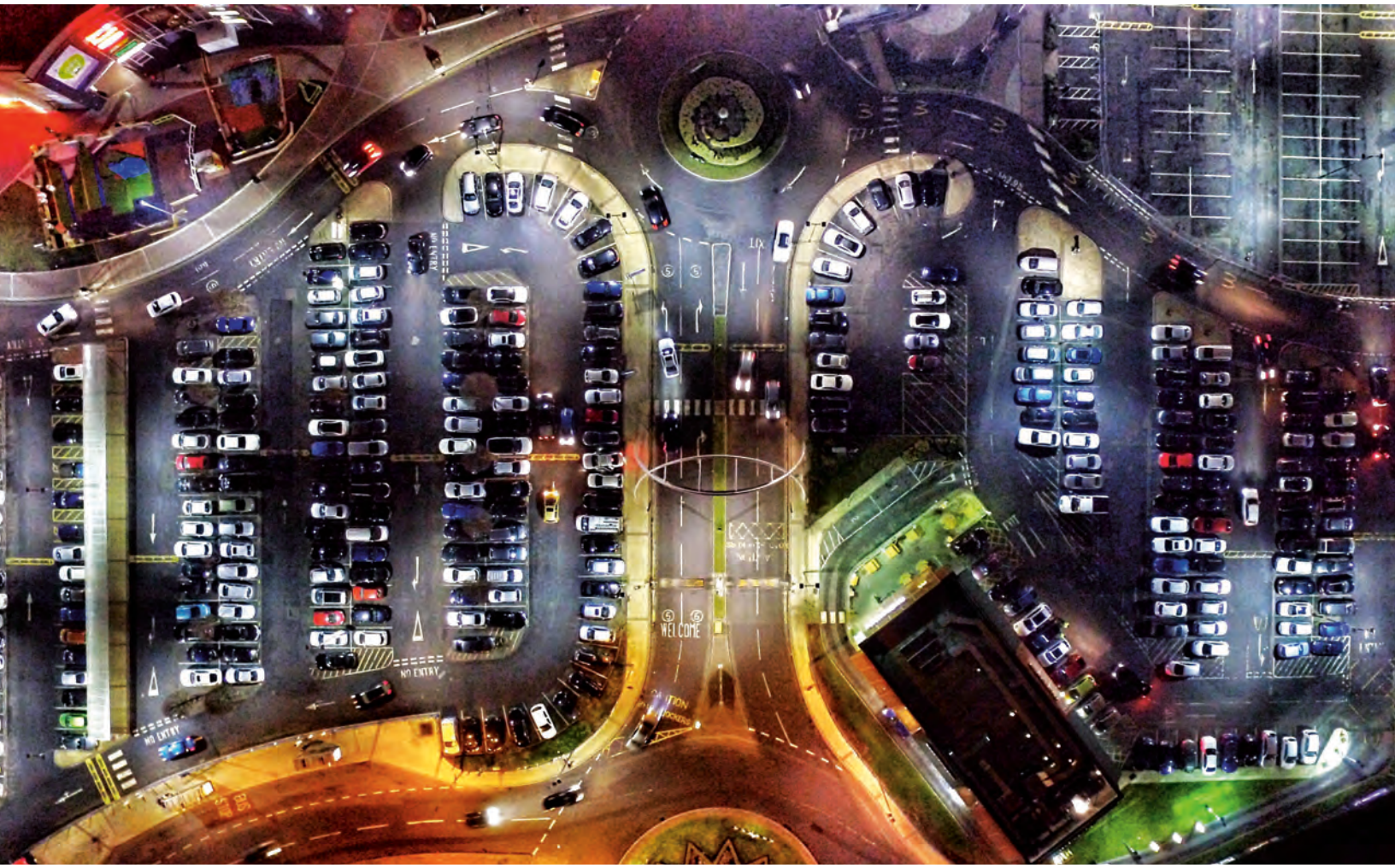
High stakes: How investors can manage risk in the new infrastructure environment

Technology is disrupting construction on multiple fronts, presenting challenges—and opportunities—for managers of infrastructure investments.

Fredrik Dahlqvist, Alastair Green, Paul Morgan, and Robert Palter



With technology transforming how we live and work, infrastructure investing is becoming more complicated. Self-driving cars, now undergoing on-road testing, could reduce the need for passenger railways or metros. As 3-D printing gains traction and manufacturing becomes distributed, ports may require fewer storage terminals. And electronic monitoring systems, which are already available on many roads, could render toll booths obsolete. For general partners raising investment funds or direct infrastructure investors, such as pension plans and sovereign-wealth funds, such changes could affect returns on the power, water, transportation, and telecom assets that were expected to provide predictable cash flows for many years.

In tandem with these shifts, technology is opening many important opportunities for investors by stimulating the need for infrastructure that wasn't on the radar a decade ago. The potential for drone deliveries, for example, could stimulate construction of docking stations, while the growth of electric vehicles (EVs) could ultimately make charging facilities as common as today's gas stations. What's more, technology is improving how construction gets done. New digital tools are emerging, including 3-D-mapping applications, virtual reality, and real-time performance dashboards. More companies are also using advanced analytics to improve performance and boost productivity, making it easier to stick to the original budget and timelines for capital projects.

These technologic shifts come at a time when many new investors are entering the infrastructure market, increasing competition for assets. The key to success involves understanding how technology is influencing the way assets are built and operated. It's also crucial to take a long-term view of technology's potential impact, since many infrastructure assets have a life span of 50 or more years. Any investment decisions made today will have lasting repercussions.

To help investors deal with disruption, we explored recent developments in the infrastructure-investment landscape, with a focus on technological advances that are changing both asset value and how assets are delivered.[1] Since there is still much uncertainty about how certain trends will play out, we also propose a structured approach for evaluating the risks and opportunities in specific asset classes as technology influences the market.

How is the infrastructure-investment landscape changing?

Infrastructure has been a rock of stability for investors, generating consistent inflation-indexed returns even during tough economic times. With construction soaring in both emerging markets and developed economies, the value of privately owned infrastructure assets—those not traded on public exchanges—rose from approximately $99 billion in 2007 to about $418 billion by June 2017 (Exhibit 1). Fundraising was remarkably fast and successful in 2017, with the average fund closing more rapidly than any year since 2009. Many funds also exceeded their target size by a large margin.

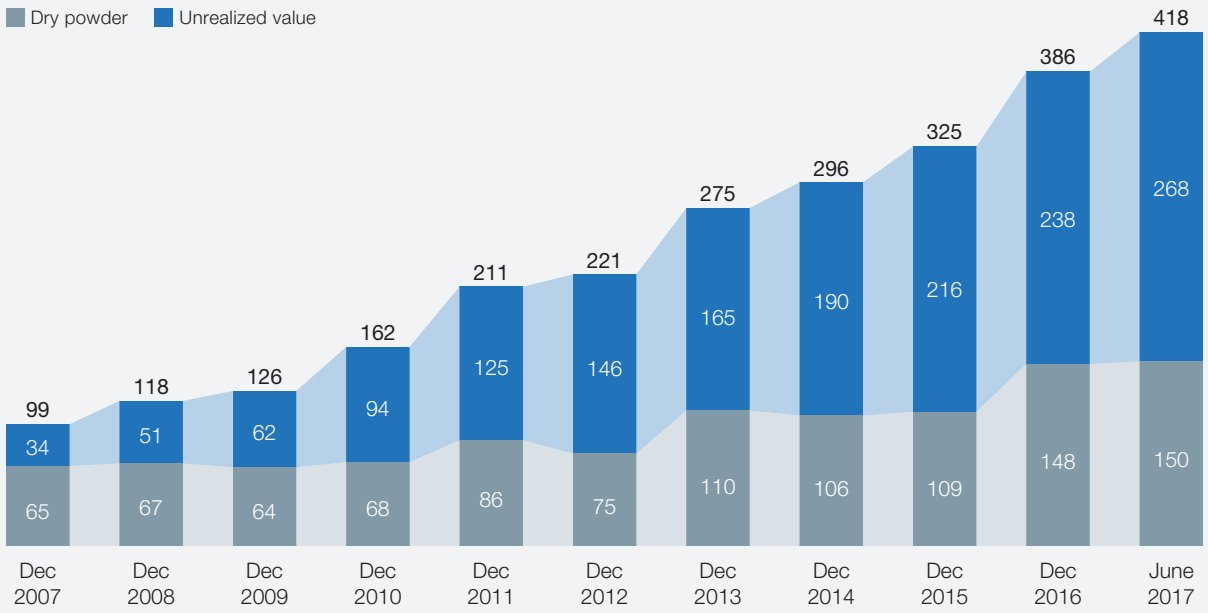
A more active role for investors

The surging infrastructure market has attracted new players who want to capture value, including private equity managers that want to expand their fund offerings and pension-fund managers that formerly limited their investments to infrastructure funds. While the potential for good returns still exists, the increased competition for traditional brownfield infrastructure assets is leading to higher entry multiples and lower overall returns.

In this competitive market, infrastructure investors are broadening their focus. Traditionally, they concentrated on core assets—those that are highly regulated in pricing and access, such as water utilities and power generation. Now, their investing

Exhibit 1 **Privately owned infrastructure assets reached a value of about $418 billion by June 2017.**

Unlisted infrastructure assets under management, total value, $ billion



Source: Preqin

targets increasingly include noncore assets, such as port operations and rolling stock, which may not be regulated. Investors look for noncore assets with higher barriers to entry, in the form of capital intensity, long contracts, and very robust client needs at specific physical-access points.

The management approach for core and noncore assets is a study in contrasts. With core assets, investors typically look at potential deals, estimate their returns, and fund those that promise to produce free-cash flow annually and appreciate over time—a traditional buy-and-hold approach. For noncore assets, investors have the potential for higher returns but also more volatility. They can maximize return by taking an active role in strategy, operations, risk management, organization, and capital planning—an opportunity that they should seize but that will require new capabilities.

The growing impact of technology

In addition to the forces just discussed, many other factors are reshaping infrastructure investment, but technological advances are potentially the most important (see sidebar, "Beyond technology: Other shifts that could affect infrastructure investment"). Although it is difficult to single out the most important technologic shifts, we have identified several that may have a particularly dramatic impact. First, companies across industries are increasingly

Beyond technology: Other shifts that could affect infrastructure investment

Technology isn't the only force bringing big changes to infrastructure. Investors must heed the following trends, which are altering both geographic demand patterns and the types of assets being built:

- **The growth of emerging markets.** Through 2030, emerging markets are expected to account for about 60 percent of demand for infrastructure.[1]
- **Urbanization.** McKinsey Global Institute estimates that large cities generate about 75 percent of global GDP today, and that figure could rise to 86 percent by 2030, increasing capital projects in these areas.
- **Increased brownfield investment in developed markets.** Many developed countries are now confronting major infrastructure issues after years of underinvestment and poor maintenance, prompting governments to increase funding.
- **Consumer preferences.** Members of the millennial generation often prefer to borrow assets rather than making a purchase. This trend could eventually influence infrastructure and construction trends if they seem disinclined to purchase homes.

[1] For more information, see *Bridging global infrastructure gaps*, McKinsey Global Institute, June 2016, McKinsey.com.

relying on big data and advanced analytics during the construction process, which significantly decreases costs and timelines. Similar benefits come from automating manual tasks or using robots. Other technologic standouts include the development of fully autonomous vehicles, also called self-driving cars or level-five vehicles, which could alter demand for transportation-related assets, and the increased interest in distributed renewable energy, which could change the infrastructure needed to generate and store power.

But how will these changes, as well as other technologic advances, affect infrastructure investment? To get the most complete view, we looked at technology from two angles: its influence on asset value and its ability to improve the construction process.

How is technology changing asset value?

Many long-term investors, including the most experienced players, haven't yet determined how technologic advances will affect demand for infrastructure—both traditional assets, like railway stations, and innovative structures that weren't on the radar ten years ago, such as vertiports for drones. Here's what they need to know about both categories.

Rethinking traditional infrastructure assets

Even if investors have long received reliable returns from traditional infrastructure assets, technology could upend these expectations. Take parking garages. These structures have typically been a solid investment, but a combination of two trends could reduce their appeal: the growth of ridesharing services and advances in autonomous vehicles. If

fully autonomous cars become a reality within the next 15 to 20 years, ridesharing services might rely on them. After dropping off their passengers, the autonomous cars would immediately leave to pick up their next fares, potentially reducing, or even eliminating, the need for parking in some areas.

But this potential trend doesn't mean that infrastructure investors should entirely write off parking garages—they just need to take a more nuanced view of the risks and opportunities. For instance, infrastructure investors have typically forecast demand for parking garages and other assets based on factors like population size, economic growth, local industrial activity, the number of available parking spaces, and a few other variables. Now they'll need to go much further than a rudimentary supply-and-demand analysis by examining additional variables, including those from new data sources, such as vehicle-tracking data that show the typical routes for local journeys and information about new government policies designed to support use of autonomous vehicles.

The new algorithms must also account for factors that could be disruptive over the long term, including the projected growth rate for self-driving cars or ridesharing services on a location-by-location basis. Investors might also need to consider whether other technology trends could affect demand or revenues. For instance, the rise of parking apps could direct drivers to garages with capacity. And garage owners could potentially see a big jump in margins if they use software programs that allow them to predict demand and adjust prices accordingly.

After their analysis, investors might determine that demand for parking is so low that their garages should be repurposed or provide a broader set of services. As one example, garages that have off-curb parking could be transformed into service centers for e-commerce package delivery or turned into vertiports for delivery drones.

Evaluating new infrastructure assets

An even more difficult puzzle involves determining how technology trends will increase demand for—or affect the value of—unconventional assets. Consider charging stations for EVs. In an age where most cars use gas, demand for these facilities is relatively low. But EVs are becoming more popular in many major markets, with registration increasing 70 percent in China and 37 percent in the United States from 2015 to 2016.[2] Over the long term, farsighted private management companies that invested early in charging stations could receive greater returns than those that focused on traditional infrastructure.

With so much uncertainty ahead, investment companies should consider a range of scenarios when estimating the value of unconventional assets. For instance, the market for renewable energy, including wind and solar power, is increasing. But there are still many uncertainties regarding the extent of their growth and the amount and type of infrastructure assets required to support them.

Consider one recent innovation related to renewables: the development of liquid-air storage. Using this technology, energy-storage plants use off-peak or excess energy to clean and chill air until it becomes liquid. It can be stored in large tanks until needed.[3] Such plants might be critical to the success of renewables like solar and wind power, which have supply peaks and troughs. These facilities are in their early stages, and it's not yet clear how popular they will become or how their infrastructure needs might change as the technology advances. Investors will need to manage these uncertainties by developing scenarios in which technology, market growth, and infrastructure requirements evolve in different ways.

How is technology changing the construction process?

In addition to affecting asset value, technology is also transforming basic construction processes.

Construction-technology companies received $10 billion in funding from 2011 through early 2017, and they've used this capital to develop and scale a host of innovative technologies to assist with tasks ranging from off-site fabrication to portfolio management to yard inspection. Automation is streamlining multiple manual processes, such as productivity monitoring, just as it has in many other industries. And companies have improved decision making by applying advanced analytics to a much broader range of data than they did in the past. For instance, project leaders that want to determine the most efficient time, location, and strategy for land moving can now analyze geologic surveys, equipment-demand projections, and forecasts about when they'll meet project milestones.

When experimenting with new, untested tools, companies may sometimes be disappointed, since it is difficult to predict which ones will succeed. The cost outlays for each tool can be significant, and a bad choice could reduce the bottom line for years. What's essential for success is an expert view of digital tools and their potential—one that helps investors sort through the confusion and focus their investment in the most promising areas.

To develop this perspective, investment companies must replace speculation about a tool's potential with a fact-based analysis. They'll need to conduct extensive research that cuts through the hype regarding tools and realistically consider risks, such as the potential for hackers to seize control through cyberattacks. For companies that make the right investment decisions, the rewards can be great. McKinsey research shows that capital-project leaders that select a strong assortment of digital tools can reduce project costs by up to 45 percent.

Even greater benefits may be possible when the tools are applied across all projects—and this will further widen the divide between digital adopters and those who stick with traditional processes.

Although all infrastructure projects face unique challenges, certain ideas and solutions offer universal benefits. For example, 5-D building-information modeling (BIM)—the combination of 3-D physical models of buildings with cost, design, and scheduling data—is now sophisticated enough to be applied to most projects and has proven results for improving execution. Digital twins—virtual models of a process, product, or service—allow teams to address problems before they escalate, identify opportunities to reduce costs or timelines, and conduct simulations that assist with planning. Drones and virtual-reality tools are fundamentally altering traditional inspection and surveying methods on construction sites. Other solutions, such as artificial intelligence and 3-D printing, could have radical implications if deployed at scale.

With so many tools on the market, some investors may be uncertain where to begin, especially if they have multiple problems that digital tools could potentially improve. In those cases, they should consider applying tools to three areas in which they have extensively demonstrated their value: risk management and project planning, field productivity, and collaboration and decision making.

How can infrastructure investors truly estimate the impact of technology?

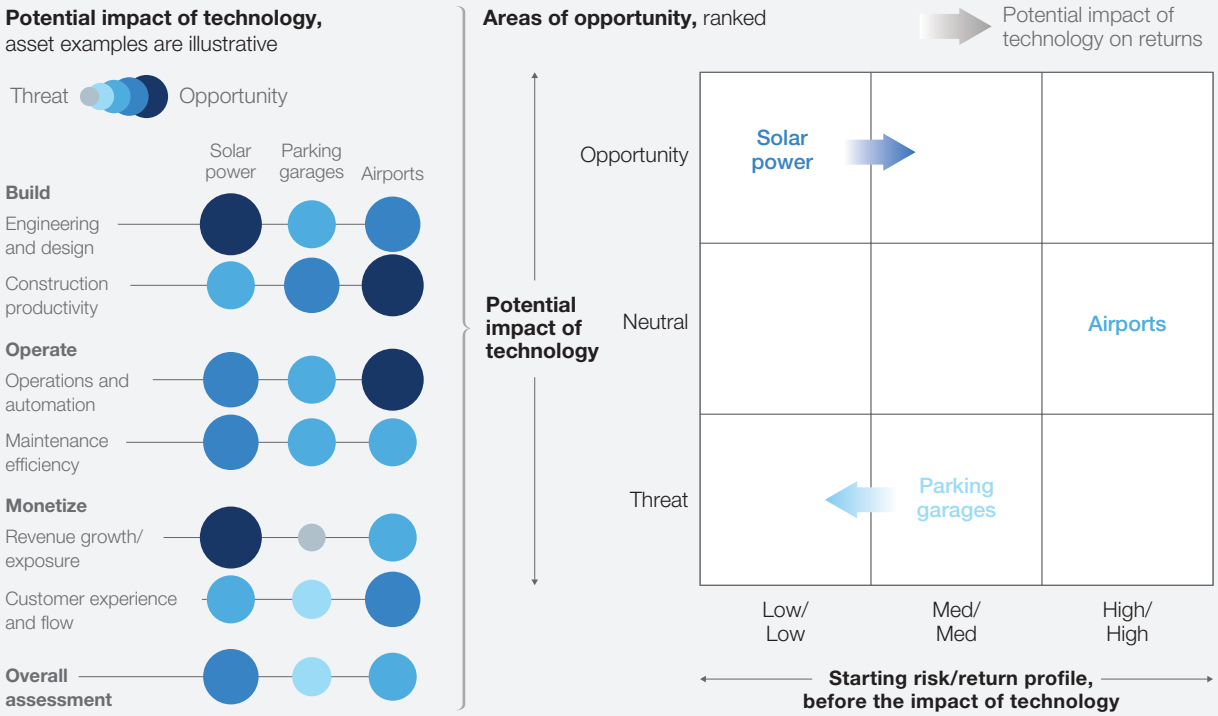
Many private-investment infrastructure companies have leaders whose backgrounds have given them relatively little exposure to technology, such as engineering or construction. To fill in their knowledge gaps, many are now working with an ecosystem of partners, including companies with specific technology expertise. When we analyzed how investors have capitalized on recent technology trends thus far, a mixed picture emerged. While some have enhanced value creation, others are still in the early stages of exploring opportunities.

As investors venture forward, they should take a more structured approach when evaluating technology's impact to ensure that they don't overlook any risks

or benefits. One possible framework, shown in a simplified example in Exhibit 2, examines two variables. First, it considers the original risk/return profile for each asset, or what investors could expect to achieve in the absence of technological advances, either inside or outside of construction. Next, the framework quantifies technology's potential impact on the building, operation, and monetization of assets. Within building, for instance, investors would have to determine if new technologies could cut costs and timelines for engineering and design, or if they could improve construction productivity. For monetization, investors would have to determine if new technologies, such as drones, could increase an asset's revenues by stimulating demand.

Using the framework, we classified solar-power assets as an important opportunity for multiple reasons. For instance, technologic improvements will create new opportunities for localized generation and distribution of energy, which could increase demand. Improvements in grid balancing—the ability to match energy supply with demand—are also increasing revenue growth for solar-power assets. By contrast, airports received a neutral rating. Although advanced analytics and greater automation could support more efficient operations, it's not yet clear whether this will have a significant impact on revenue generation. We also determined that technology would have a negative impact on parking garages, because autonomous vehicles might decrease demand.

Exhibit 2 **Leaders should evaluate technology's impact on projects through a more structured approach.**



Since the framework only looks at technology issues, investors would have to assess the impact of other trends separately to determine the best path forward, and that could alter their perspective. Let's return to the parking-garage example. These assets might seem relatively unattractive if viewed solely through a technology lens, but investors might still see some potential if they consider how increased urbanization could stimulate demand.

For this framework to be valuable, leaders will have to increase their investment in data collection and analytics. Otherwise, they risk over- or underestimating technology's impact. Their investment will pay off, however, since investors with the best knowledge might become the go-to groups for certain asset classes. Government agencies might be particularly interested in hearing their perspectives, which could increase the potential for public–private partnerships.

Of course, investment companies need to apply the framework using the most current data, and their perspective may change as new information becomes available. If they fail to make updates, they may overinvest in tools or systems that soon become outdated, just as the telecommunications industry did with third-generation connectivity back in the early 2000s, when no one predicted that it would be eclipsed by later generations in fewer than 20 years.

Investors may be frustrated by the uncertainty ahead. But in selecting their investments, they must consider the inevitability that technology will alter the investment landscape. Likewise, they need to understand how technology is fundamentally changing every phase of construction, from planning through completion. A solid in-house view of digital change won't guarantee success, but it's a major step in the right direction.

[1] Most infrastructure investment comes from direct investors. We use the term "investors" to refer to both general partners and direct investors.

[2] Patrick Hertzke, Nicolai Müller, and Stephanie Schenk,"Dynamics in the global electric-vehicle market," July 2017, McKinsey.com.

[3] Katia Moskvitch, "Tesla's lithium ion battery tech gets a cool rival: Frozen liquid air," *Wired*, June 7, 2018, wired.com; Adam Vaughan, "Pioneering 'liquid air' project can help store excess electricity," *Guardian*, June 5, 2018, theguardian.com.

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A closer look at impact investing

The mistaken rap on this kind of "social" investment is that returns are weak and realizing them takes too long.

Vivek Pandit and Toshan Tamhane

With the fraying contract between society and business an urgent priority, many companies and banks are eager to find investments that generate business and social returns. One avenue is "impact investing," directing capital to enterprises that generate social or environmental benefits—in projects from affordable housing to sustainable timberland and eye-care clinics—that traditional business models often sidestep.

Mainstream investors often fear to tread on this terrain, leaving the field to adventurous venture capitalists and nongovernmental organizations (NGOs) who act as "first institutional investors." While they see a clear upside in new customers and satisfied employees, they accept the conventional view that these investments can't be scaled adequately to create attractive returns, carry higher risk overall, and are less liquid and thus tougher to exit. Impact investing may be forecast to grow to more than $300 billion by 2020, but even that would be a small fraction of the $2.9 trillion or so that will likely be managed by private equity (PE) firms worldwide in 2020.

Our research in India—a test bed of new impact-investment ideas, where some 50 investors have poured $5.2 billion into projects since 2010 and investment is growing at a 14 percent annual clip—presents a different perspective. We tested four notions that have made mainstream investors shy. The findings suggest that as more companies and larger investors become acquainted with the true state of play, in India and elsewhere, they'll find investment opportunities that align with their social and business aims.

The myth of lower returns

Impact investments in India have demonstrated how capital can be employed sustainably and how it can meet the financial expectations of investors. We looked at 48 investor exits between 2010 and 2015 and found that they produced a median internal rate of return (IRR) of about 10 percent. The top one-third of deals yielded a median IRR of 34 percent, clearly indicating that it is possible to achieve profitable exits in social enterprises.

We sorted the exiting deals by sector: agriculture, clean energy, education, microfinance firms and others that work to increase financial inclusion, and healthcare. Nearly 80 percent of the exits in financial inclusion were in the top two-thirds of performance. Half the deals in clean energy and agriculture generated a similar financial performance, while those in healthcare and education have lagged behind. With a limited sample of only 17 exits outside financial inclusion, however, it is too early to be definitive about the performance of the other sectors.

Exhibit 1 shows some evident relationships between deal size and volatility of returns, as well as overall performance. The larger deals produced a much narrower range of returns, while smaller deals generally produced better results. The smallest deals had the worst returns and the greatest volatility. These findings suggest that investors (particularly those that have been hesitant) can pick and choose their opportunities, according to their expertise in seeding, growing, and scaling social enterprises.

Capital doesn't need as much patience as you think

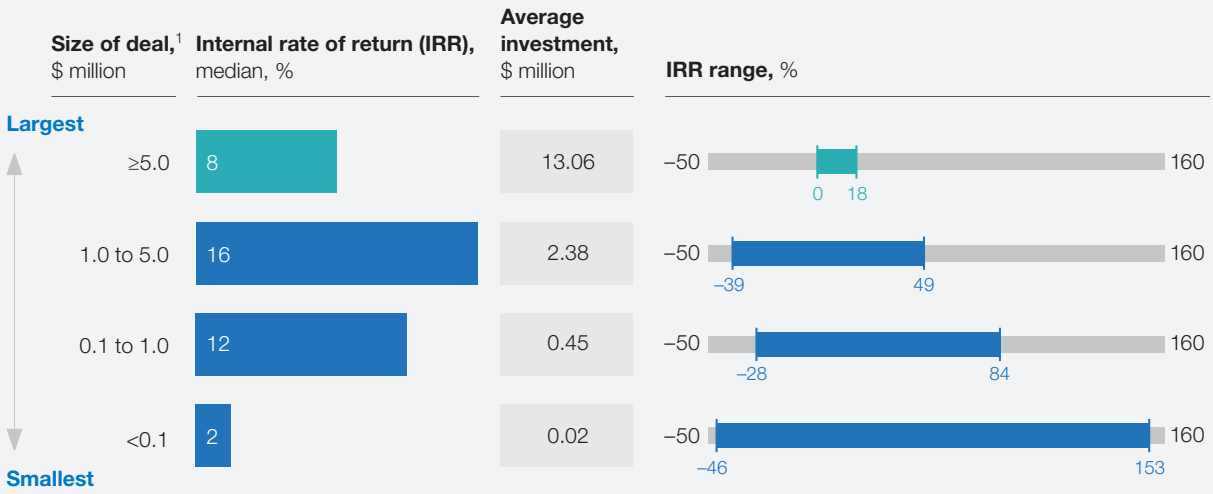
Our analysis shows that both the mean and the median holding periods when investors exit have been about five years, no different from the holding periods for conventional PE and venture-capital (VC) firms. Deals yielded a wide range of returns no matter the holding period. Viewed another way, this also implies that social enterprises with strong business models do not need long holding periods to generate value for shareholders.

Conventional funds are joining in

Social investment requires a wide range of investors to maximize social welfare; companies receiving

Exhibit 1

Midsize deals produce better results on average, while the smallest generated the greatest volatility.



[1] Number of exited deals = 48.

Source: Impact Investors Council survey covering investments over the years 2010–16; VCCEdge; McKinsey analysis

investment need different skills as they evolve. Stage-one companies need investors with expertise in developing and establishing a viable business model, basic operations, and capital discipline. For example, one investment in a dairy farm needed a round of riskier seed investment before becoming suitable to conventional investors.

Stage two calls for skills in balancing economic returns with social impact, as well as the stamina to commit to and measure the dual bottom line. And stage three requires expertise in scaling up, refining processes, developing talent, and systematic expansion.

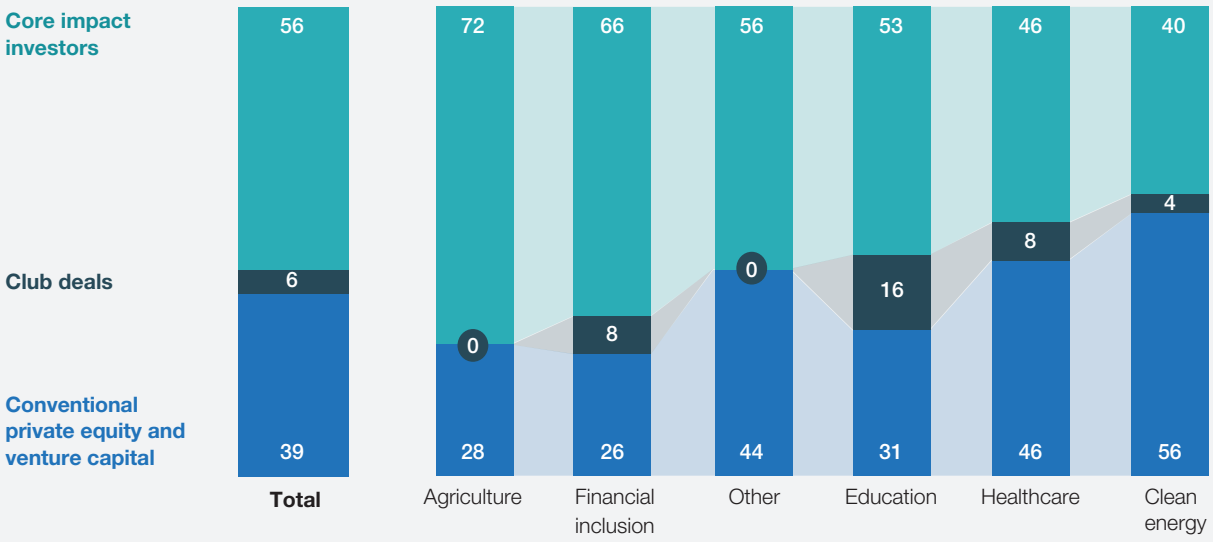
Core impact investors were the first investors in 56 percent of all deals (Exhibit 2) and in eight of the top ten microfinance institutions in India. Significantly, we found that this led to interest from conventional PE and VC funds, even as the business models of the underlying industries began to mature. Conventional PE and VC funds brought larger pools of capital, which accounted for about 70 percent of initial institutional funding by value.[1] This is particularly important for capital-intensive and asset-heavy sectors such as clean energy and microfinance. Overall, mainstream funds contributed 48 percent of the capital across sectors (Exhibit 3).

Club deals that combine impact investors and conventional PE and VC funds contributed 32 percent of capital and highlight the complementary role of both kinds of investors. As enterprises mature and

Exhibit 2

Core impact investors play a critical role in seeding and de-risking social enterprises.

Deals as first institutional investor,[1] %



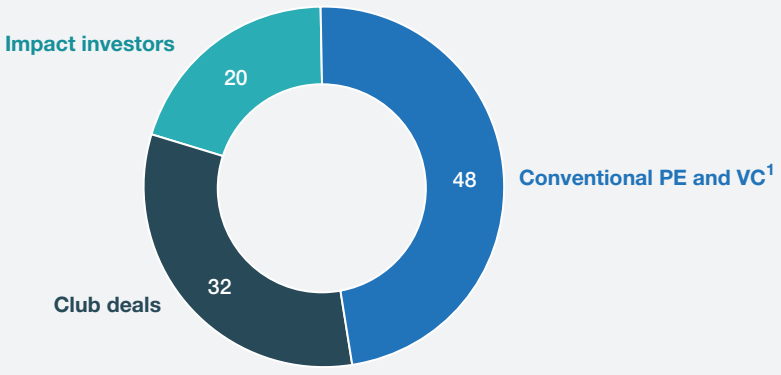
[1] Based on data for 248 first institutional deals; figures may not sum to 100%, because of rounding.

Source: Impact Investors Council survey covering investments over the years 2010–16; VCCEdge; McKinsey analysis

Exhibit 3

Overall, mainstream funds contributed nearly half the capital across sectors.

Share of investment value by type of investor, %
100% = $5.2 billion in cumulative investments



[1] Private equity and venture capital.

Source: Impact Investors Council survey covering investments over the years 2010–16; VCCEdge; McKinsey analysis

impact investors remain involved, they are able to pull in funding from mainstream funds. Not-for-profit organizations also play a complementary role by providing highly effective boots-on-the-ground capabilities. Nonprofits have typically been active longer than impact companies and have developed cost-effective mechanisms for delivering products and services and implementing business plans. Impact investors could be seen as strategic investors in not for profits, which in turn play a role in scale-up, talent attraction, and the delivery of financial and operating leverage. One impact investor, for instance, built a sister organization to coach microfinance founders as they set out, and helped them build skills.

The social impact is significant

Impact investments touched the lives of 60 million to 80 million people in India. That's equivalent to the population of France, a figure that is much greater than the proverbial drop in the ocean many imagine impact investment to be—more like a small sea. To be sure, India has vast populations of people in need. But then again, as social enterprises scale, so will their impact, reaching a critical number of at-risk people in smaller populations.

As investors reexamine their understanding of impact investing, the capital commitments they make are sure to expand. That will undoubtedly provide new challenges. But our research suggests that this nascent asset class can meet the financial challenges as well as achieve the social returns sought by providers of capital globally. ■

[1] VCCEdge, vccedge.com.

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Looking behind the numbers for US stock indexes

Record-high equity markets are prompting worries that stocks are overpriced. But a closer look finds that the market's current value may not seem so extreme.

Ravi Gupta, Bin Jiang, and Tim Koller

This article, originally published in January 2018, offers a look back at the dynamics behind the recent market highs. — Editor

After a series of record-breaking closes for US stocks and the prospect that lower corporate-tax rates might continue to boost markets, investors had plenty to be excited about as 2017 drew to a close. But the run-up has also spurred growing concerns of a bubble in overpriced shares. At the time of this writing, the S&P 500 index's one-year-forward P/E stood at 18.6,[1] higher than in the majority of years over the past five decades.

Yet it bears remembering that the headline number was misleading during the dot-com bubble around the turn of the century. And it may be so again. By digging deeper into what is behind that P/E and putting it into a context that includes the real economy, a picture of market value begins to emerge that doesn't seem so extreme. Executives should focus on their companies' and industries' value, not markets as a whole. That said, additional perspective can help investors and strategic planners alike make better decisions.

Carrying weight

The S&P 500 is a value-weighted index, meaning that each company's contribution to the index is not equal; it is a reflection of its individual value. While in most years unusually high- or low-value companies will cancel out any distortion to the index overall, that isn't always the case. In 1999, for example, a small number of megacapitalization (megacap) stocks[2] with very high P/Es distorted the index. Removing those companies led to a P/E for the rest of the index that was well within normal bands. Something similar happened decades earlier. In 1972, a high-market-capitalization company like Kodak traded at 37 times its forward earnings, and Xerox traded at 39 times.

We find the same situation today. Four megacap companies—Amazon, Facebook, Google (Alphabet), and Microsoft—together valued at more than $2 trillion, account for 10 percent of the index and, as a group, trade at a P/E of 29.[3] Excess cash among the remainder accounts for another $1.2 trillion. (The S&P 500's total market capitalization in December 2017 was $23.4 trillion.) Excess cash distorts the index because it generates very little in earnings, leading to an implied high P/E multiple.[4] This is the case with the unusually large levels of cash held by a number of companies today. Removing the four companies previously mentioned from the calculation and adjusting for the excess cash that companies hold as they await changes to tax laws before repatriating foreign profits reduces the current P/E to 16.9 (Exhibit 1). This is much closer to the range typical in "normal" economic times such as the mid-1960s, the late 1980s and early 1990s, and the years 2003 and 2004, when the US economy was growing and inflation was under control.

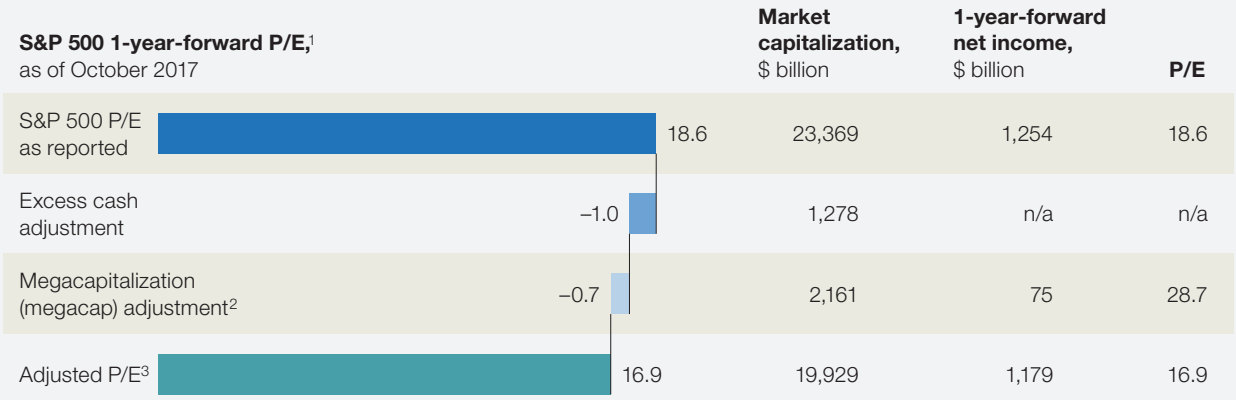
A real test

It is useful to put that number into context by relating it to the real economy.[5] A company's value and the market as a whole (as well as the P/E) are related to its cash-flow generation and its cost of capital. Cash-flow generation, in turn, depends on profit growth and return on capital. Using a discounted-cash-flow model, we can reverse engineer the S&P 500's P/E to see what future performance would be required to justify that P/E. A 16.9 P/E is consistent with a long-term profit-growth rate of about 4.5 percent.[6] Subtracting about 2.0 percent for expected inflation leads to long-term real-profit growth of about 2.5 percent. Profit growth is often compared with growth in GDP. That profit growth would be slightly more than the 2.3 percent average annual GDP growth over the past 20 years but less than the 50-year rate of 2.8 percent. As for GDP forecasts, some analysts believe that the United States is stuck in a slow-growth environment of less than 2.0 percent real growth, while others believe that potential growth is closer to 2.5 to 3.0 percent.

Care should be taken in comparing profit growth with GDP growth. On the one hand, corporate profits have been growing faster than US GDP and are near

Exhibit 1

Adjusting for excess cash and four megacapitalization companies, the S&P 500's current P/E would drop to about 16.9 from 18.6.



[1] Based on S&P 500 constituents as of Oct 23, 2017.
[2] In this comparison, the megacap companies are Amazon, Facebook, Google (Alphabet), and Microsoft.
[3] 1-year-forward P/E defined as (market capitalization adjusted for excess cash)/1-year-forward net-income estimate.

Source: Capital IQ; CPAnalytics; DataStream; McKinsey analysis

all-time highs, relative to GDP. These profit increases have occurred partly because of higher earnings from outside the United States and partly because of a shift in the economy toward higher-profit industries such as technology, pharmaceuticals, and medical devices. For example, the share of profits earned by high-P/E industries, including technology, pharmaceuticals, and medical devices, increased from 13 percent in 1989 to 32 percent in 2014.[7] On the other hand, the share of profits from low-P/E industries, including automotive, mining, oil, chemicals, paper, and utilities, has declined from 52 to 26 percent during the same period.

Furthermore, some industrial companies, particularly those that provide critical components to other companies, have been able to increase their profit margins. Whether or not profit growth will keep up with GDP growth or slow down is subject to debate. Another factor to consider is how the substantial reduction in corporate taxes as part of the US tax-reform effort plays out. Lower taxes could lead to a one-time increase in corporate profits or be eroded by competition, in which case savings would be mostly passed on to customers.

Overly sensitive?

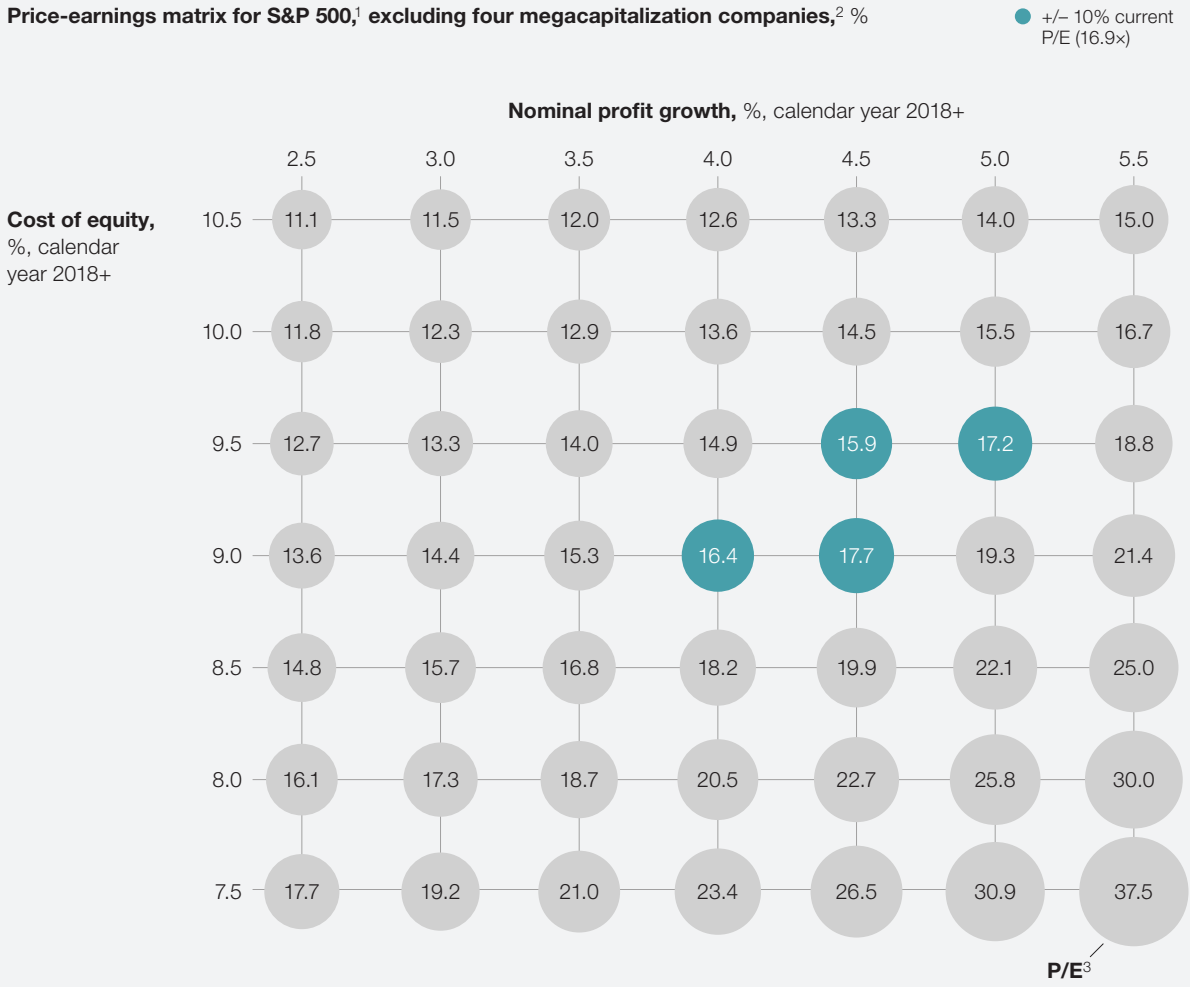
The P/E is very sensitive to small changes in assumptions about future growth and the cost of equity (Exhibit 2). For example, a 16.98 P/E is equivalent to a lower cost of equity of 8.5 percent and a lower nominal growth rate of 3.5 percent, compared with the base case previously presented. Our earlier research explained that the cost of equity had not decreased with central-bank policies of quantitative easing that produced unusually low interest rates.[8] Others have argued that low rates are here to stay for a very long time and that the cost of equity should be lower.

The margin of error in interpreting P/Es is quite large. In general, a half-percentage-point change in the cost of equity changes the P/E by a whopping two times, or about a 10 percent change in the index (about 260 points

Exhibit 2

Small changes in assumptions about cost of equity and growth can produce large changes in P/E.

Price-earnings matrix for S&P 500,[1] excluding four megacapitalization companies,[2] %



[1] Based on S&P 500 constituents as of Oct 23, 2017.
[2] The 4 megacapitalization companies are Amazon, Facebook, Google (Alphabet), and Microsoft.
[3] Based on an incremental return on equity of 22%.

Source: Capital IQ; CPAnalytics; DataStream; McKinsey analysis

at the recent index value of 2,600). Similarly, a half-percentage-point change in the projected growth rate changes the P/E and value by between 5 and 10 percent.

This high level of sensitivity means that investors and executives shouldn't read much into value fluctuations of 10 percent or even 20 percent. While a deep recession will undoubtedly reduce share prices for a period of time, what matters for long-term investors is the long-term trend in corporate profits and returns on capital.

For executives, it bears repeating that there isn't much evidence that the cost of equity has declined significantly, despite low interest rates, so companies probably shouldn't lower their required rates of return

for investments. Furthermore, executives should focus on the value of their company and industry, not the market as a whole. They should also not put much weight on stock-market volatility, which will always be present and should not influence strategy. ■

[1] P/E is defined as share price/one-year-forward earnings.

[2] We define megacaps as companies that have attained market capitalizations in the hundreds of billions of dollars, with very high P/Es.

[3] While Apple has a larger market capitalization than these companies, its P/E (adjusted for its very large cash reserves) is below the average for the S&P 500.

[4] The multiple on cash is high because both its return and cost of capital are very low. Suppose a company earns 1 percent on its cash. Because cash enjoys low risk, its cost of capital is also 1 percent. So, $1 billion of cash would earn about $10 million per year, or a P/E multiple of 100.

[5] Ritesh Jain, Bin Jiang, and Tim Koller, "What's behind this year's buoyant market," *McKinsey on Finance*, October 2014, McKinsey.com.

[6] Assuming a 9.2 percent cost of equity and a 22 percent return on equity.

[7] Tim Koller, "Are share buybacks jeopardizing future growth?," *McKinsey on Finance*, October 2015, McKinsey.com.

[8] Richard Dobbs, Tim Koller, and Susan Lund, "What effect has quantitative easing had on your share price?," *McKinsey on Finance*, Number 49, Winter 2014, McKinsey.com.

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Finding untapped potential in European healthcare service providers

European healthcare service providers are complex and fragmented, but with niche market knowledge and a creative approach, investors can create substantial value.

Yair Erez, Jamie Littlejohns, and Dmitry Podpolny

Healthcare has long been an attractive investment area. Returns over the past 15 years led all industries.[1] In Europe, the market's attractiveness is underpinned by fundamental tailwinds—for example, population growth, aging populations, and an increase in incidence of chronic disease. Further, Europe's predominately public-led healthcare systems suffer from poor access to capital and are increasingly willing to accept private investment in care delivery to improve care efficiency, effectiveness, and access.

Of course, with high performance comes intense competition. European healthcare is no longer the exclusive hunting ground of private equity. Hot opportunities are attracting new investors who have traditionally not invested in healthcare, including infrastructure investors, other long-term investors (pension funds), and ex-Europe funds (Asian funds or sovereign-wealth funds), to name only a few.

Even with more competition, many services, such as oncology and fertility clinics, are largely untapped by investors. Some of these remain untouched because the market remains too fragmented and assets fall below investment thresholds for revenues and earnings, while others have been deemed too risky by investment committees owing to heavy exposure to a single reimbursement system or a single regulatory body.

In our experience, however, these internal restrictions, while established for good reason, can prevent investors from accessing considerable untapped value. With niche knowledge and some creativity, it is possible for investors to bring comfort to their various committees. To do so, intrepid investors must follow a set of rules to identify the most promising acquisition targets. In addition, investors can use more novel value-creation strategies to roll up businesses and unlock any as-yet unclaimed value. Our research has revealed valuable insights into potential attractive subsectors, allowing us to explore how investors might identify and unlock value in untapped niches.

Gaining a deeper knowledge of European healthcare provision

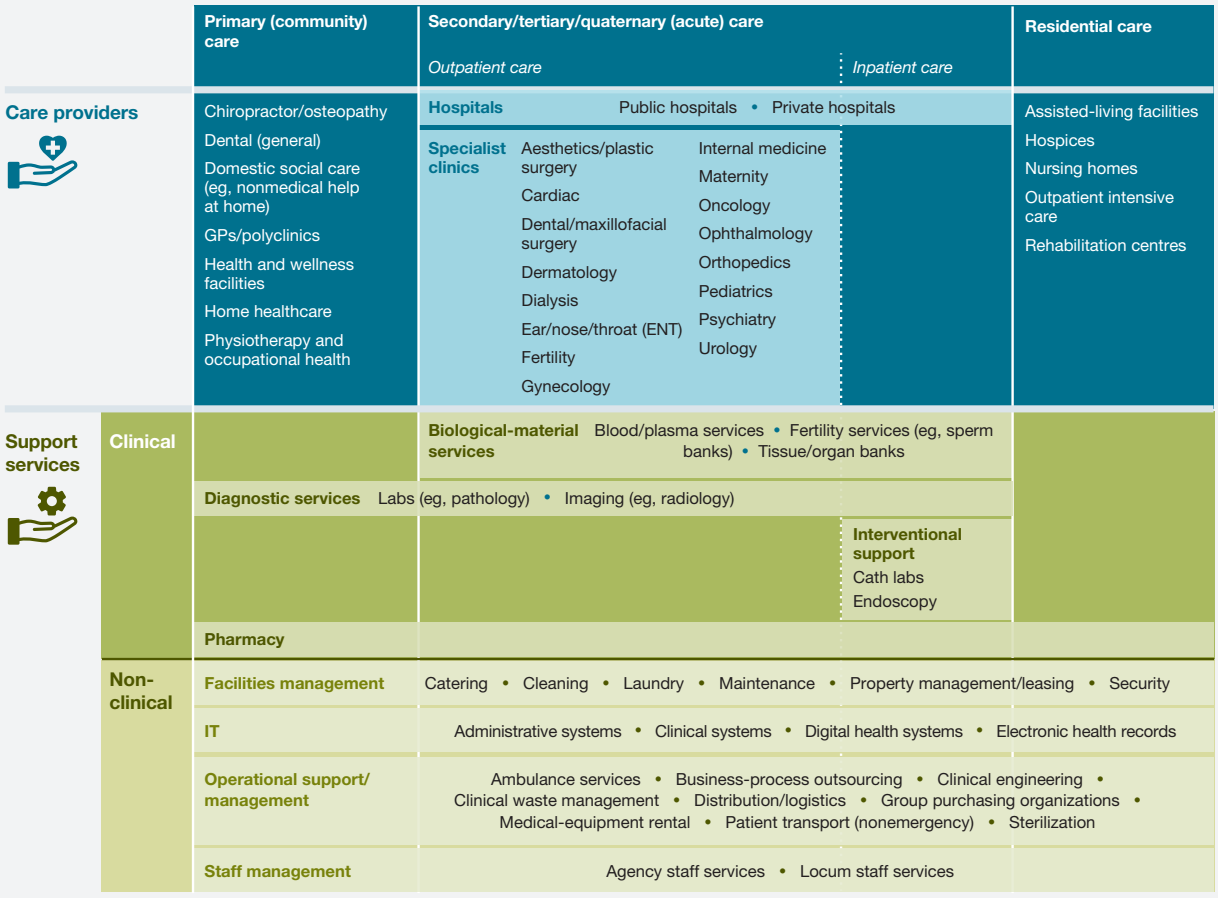
The private (nongovernment) European healthcare service-provider market is vast—Western Europe alone is more than $460 billion—and highly fragmented.[2] Europe has thousands of providers across dozens of specialties, in direct care delivery and supporting clinical and nonclinical services (Exhibit 1).

Despite this complexity, the market has grown steadily but modestly at approximately 1 percent per annum since 2013, and our analysis suggests that low-single-digit growth, around 2 to 3 percent per annum, will continue over the next five years.[3] Although that's a little lower than growth in other healthcare segments—pharmaceutical services in Europe are forecast at nearly 8 percent per annum through 2023—considerable value is accruing in high-growth and high-potential niches.[4] Firms that are willing to consider smaller targets and take a more hands-on approach to building a business stand to win big.

European veterinary clinics are a fantastic example of where this hands-on approach has been done well. In June 2014, Nordic Capital announced its acquisition of AniCura, a leading European veterinary chain. During Nordic's four years of ownership, AniCura grew fourfold, increasing (organically and inorganically) its number of clinics to 200 from 50, its employees to 4,000 from 1,000, and its pro forma revenues to about $370 million from $100 million.[5] In June 2018, Nordic announced its sale to Mars Petcare. Financial details were not disclosed, but the sale values AniCura at close to €2 billion ($2.3 billion) and is reported to have delivered Nordic Capital an impressive sevenfold return, according to a source familiar with the deal.[6]

What Nordic has achieved is a great example of the value that can be created when a large but highly fragmented market is actively rolled up by an investor. Similar strategies would play out well in other market niches where capital investment and a strategic

Exhibit 1 **The European healthcare system comprises thousands of care providers and support services across dozens of specialties.**

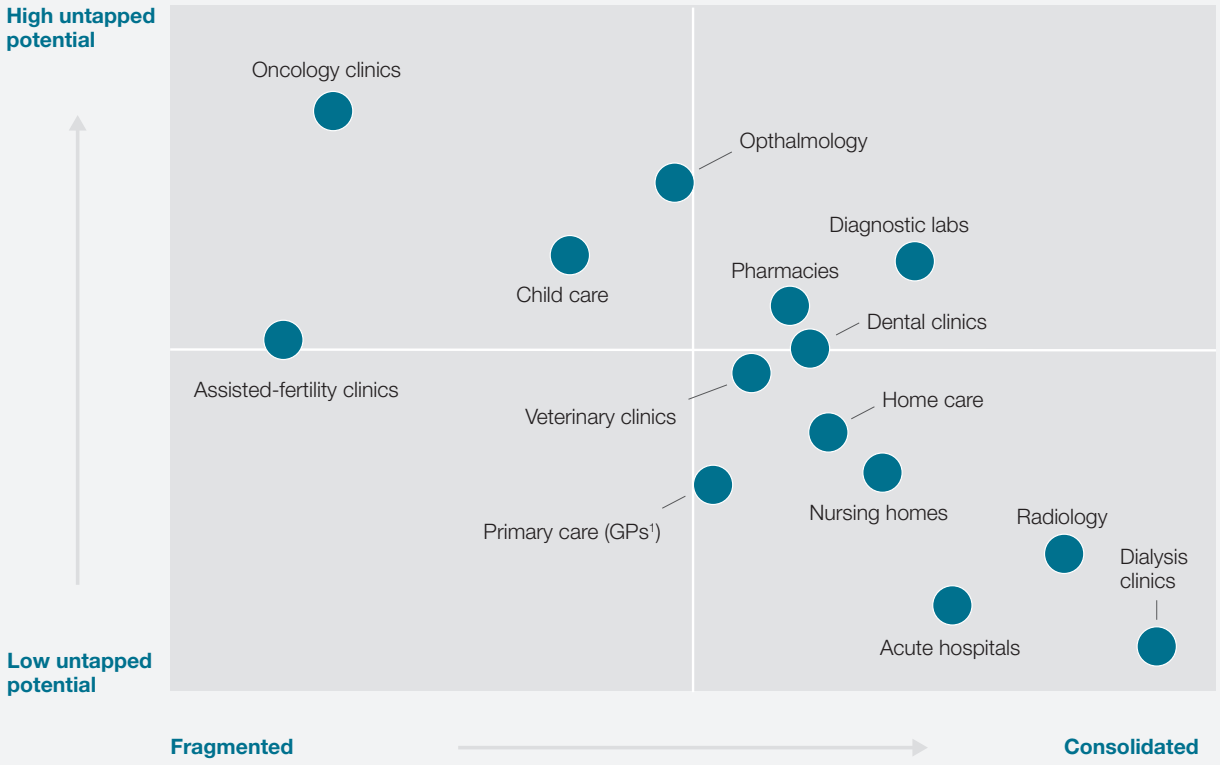


mind-set is much needed—so long as investors account for the nuance among different sectors and geographies.

Equally, many of these niches present similar challenges to investors. For example, strict regulation that is often closely linked to public care provision and varies significantly among countries can create challenges in taking business across borders. Reimbursement schemes can be complex and include payment from governments, private health insurers, and patients themselves. High fragmentation across areas of care provision, particularly in the outpatient-clinic space, and political as well as reputational sensitivities in the minds of the public, politicians, and the media, are additional risk considerations.

Still, many investors are attracted to the untapped potential in healthcare services, which broadly correlates to the level of fragmentation in each subsegment. Exhibit 2, which is based on our experience, shows a qualitative analysis of the relative opportunity and fragmentation aggregated across Europe.

Exhibit 2 **The level of fragmentation in each subsegment broadly correlates with the amount of attractive opportunities within that subsegment.**



[1] General practitioners.

The challenge is knowing where to spend time looking, and where an investor's unique edge might help beat the competition in an increasingly competitive market. A set of rules can help determine where to find attractive opportunities.

Seven rules to effectively identify investment targets

Precisely where and how to enter this market will depend on an investor's appetite for return, risk, and effort. Regardless of these factors, all investors should follow seven rules when seeking acquisition targets:

Rule 1: Be clear on your investment parameters—but don't be afraid to challenge them in creative ways. When we talk with investors, we are often surprised by how whole market segments are written off as too fragmented, too risky, or unattractive—essentially tarring the whole segment with the same brush. In some cases, investors are probably right to avoid a nascent industry with a lot to prove. However, this approach leaves potential gems on the table, including businesses that fail on just one criterion but that could be quickly "fixed" with a suitable bolt-on to diversify risk, for example. Investors should therefore

be clear on their investment parameters, then look again at sectors they have previously written off to see if there is a hidden gem. In some cases, creative investing and a novel approach can create value in a business that almost works.

Rule 2: Build a deep understanding of your starting market. It's no secret that opportunities are highly market specific. To truly create value, investors must have a detailed understanding of local market dynamics—especially in regulation, reimbursement, and political sensitivities—and the opportunities and restrictions those dynamics could place on creating value. Investors weighing going deep versus going broad would typically be best served by going deep. Identifying an attractive subsector and geography and then working toward a deep understanding of the value-creation potential is preferable to looking broadly across subsectors or geographies.

Rule 3: Understand the incentives created by the target's surrounding ecosystem and consider those in determining scalability. Taking a successful business model from one region to another can seem attractive, but more detailed examination often reveals that the conditions in one location—such as highly specific regulations and reimbursement practices—are too different to make a cross-border move viable. The critical factor here is how those conditions create incentives on the decision makers along the value chain (for example, a referring physician), and so while the exact regulations and reimbursement may not be identical across regions, by looking at the incentives they create, investors can find similar regions that could present potential future expansion opportunities.

Rule 4: Look for 'unofficial networks.' As previously noted, finding sufficiently large targets in more fragmented subsectors can be challenging. However, what we would term "unofficial networks"—affiliated individual clinics that are separate businesses but operate as a network—may provide opportunities to purchase at once what are essentially minichains of multiple businesses. Such networks often go undetected and often require on-the-ground market intelligence to find.

Rule 5: Select targets wisely—and be patient. Sourcing in this market primarily means looking at individual businesses or small chains. Persuading individuals to sell a business they have spent their entire career building can be a time-consuming endeavor. Identifying the right businesses to acquire is a combination of finding the right fit with your value-creation strategy and identifying purchases that can actually be completed. Seeking out businesses with owners who are likely to retire soon can speed the roll up of a market. One investor looking to acquire ophthalmology clinics in Germany performed an exhaustive scan of clinic owners and practitioners, collating data from multiple sources to identify owners approaching retirement age. An initial list of more than 4,500 facilities was filtered down to 11 clinics that met size requirements and had an owner aged 55 or older with no obvious offspring or heir in the business to pass it on to, significantly streamlining their search efforts.

Rule 6: Attract the right talent to the organization. One of the major benefits of building scale is the ability to attract and inspire talent; however, this, in addition to identifying and executing acquisitions, requires strong leadership. The existing leadership of a small platform organization is unlikely to have the necessary capabilities. Therefore, when considering a challenging roll-up within a particularly fragmented industry, it is best to find the right leadership team early, preferably before the first acquisition.

Rule 7: Be flexible with your proposed operating and ownership model. Providing the right operating-model option can be an important criterion for persuading a founder or owner to sell. Especially in clinical care, investors often need the founding physician to stay on in a clinical capacity, and

physicians will have different requirements as to how they want to do this. Some may want to only do clinical work on a fixed salary, while others may want to maintain a stake in the business and be more hands-on in expanding it. We have seen this approch put to particularly good use in a European dental-chain expansion, where the private equity owners were flexible in how newly acquired practices could be governed, dramatically increasing the independent owners' propensity to sell.

Of course, the ability to unlock this potential will ultimately come down to an investor's appetite for each subsector, their value-creation strategy, and, crucially, their ability to execute and roll up to a sufficient scale and realize synergies.

Multiple options to create value

Traditional value-creation methods that work across sectors, such as consolidating back-office functions to reduce costs, also often work for European healthcare providers. However, there are a number of other scale synergies, some unique to healthcare providers, which investors should consider.

Horizontal expansion

In many public health systems, there is growing unmet demand for access to preventative and primary care. Much of this is low-acuity (in other words, low clinical complexity) work, such as vaccinations, basic health advice, and access to simple diagnostics and over-the-counter medications. Traditionally, much of this demand has been handled by the primary-care physician (PCP). However, with PCPs under increasing demand to treat more severe complaints, regulators are trying to push the bulk of the lower-acuity care into other settings. As a result, pharmacies, diagnostic centers (such as blood-collection points), health and fitness centers, and even workplaces are picking up this slack. The strategy of expanding service delivery to help meet this unmet demand works in subsectors such as pharmacies and elder care where there is a high footfall of customers or patients and a clear unmet need in the broader health system for that patient group.

Vertical integration

Care providers are often able to make margins on care delivery, while some costs—most notably for highly priced drugs—are passed through to the payer with no markup. In some areas, such as oncology, providers have no control over most costs. However, providers that have achieved adequate care-delivery volumes can create significant value by working with pharmacies. Vertical integration (combining delivery care with pharmacies) allows the care provider to negotiate better prices for its drug purchases while achieving more consistent, high-quality care by standardizing prescribing drugs for common conditions across physicians. Similarly, renal-dialysis-clinic chains are able to offer competitive care costs because they take advantage of their immense scale to achieve better terms with drug manufacturers. This strategy works especially well in subsectors where there are high pass-through costs.

The challenge is knowing where to spend time looking, and where an investor's unique edge might help beat the competition.

Cross-selling

In many of the more fragmented care-delivery sectors, clinics are still managed by their founding physician, whose primary focus is on clinical care rather than building the business. As a result, significant unmet patient demand could exist for additional products or services, if a more commercial mind-set were taken. Recent roll-ups of veterinary clinics have highlighted the value of this approach, with large chains offering additional services, including grooming, pet-hotel services, and access to specific products through a small shop in the clinic. This strategy works well in subsectors, such as veterinary, dental, and aesthetics (laser hair removal, for instance) where payers or patients spend significant sums on related products and services outside the clinic.

New digital channels

In some fragmented subsectors, investors have opted for more disruptive value-creation strategies—for instance, using technology to provide new channels that capture unmet demand from patients. In many countries, for example, the aging population and public-spending constraints have resulted in long waits to see a primary-care doctor. Entrepreneurs and investors are now offering teleconsultations using video-chat applications on smartphones, tablets, and PCs to take advantage of this unmet demand. Subsectors, such as primary care, and other nonmedical care, such as elderly social care, are particularly ripe for this approach. These subsectors tend to have high unmet demand and limited capacity to meet it. Similarly, there is increasing demand for easier access to care for those with busy lifestyle considerations—say, career-focused consumers—presenting entrepreneurs and investors with further untapped potential to unlock.

Improving care value with automation and digital tools

Healthcare has traditionally been slow to adopt new technologies. This is a consequence of a number of factors, including limited access to capital, complex processes, underinvestment in staff development and digital capabilities, and competing priorities. However, this reluctance creates an opportunity for canny investors to disrupt existing work flows by applying cutting-edge automation and digital technologies. This strategy works particularly well in areas where there are highly repeatable and automated tasks, such as pathology or radiology. There are numerous attempts already under way—for example, the remote reading of scans to improve turnaround times and also to create automation by allowing robots powered by artificial intelligence to concurrently read scans and learn from their human counterparts.

Medical tourism

Not all care is available locally and not all care is cost effective for patients. In areas with high out-of-pocket costs, such as aesthetics or fertility, or in those with a particular criticality to the patient (also fertility or oncology), patients are often willing to travel to receive higher-quality or lower-cost care. For example, proton-beam therapy for cancer care was not widely available in most of Europe until recently, so many patients traveled to the Czech Republic, among other places, to obtain it. Similarly, the European market for in vitro fertilization (IVF) is particularly booming in Spain, Ukraine, and the Czech Republic, where care costs are significantly lower than the other EU nations and regulation is favorable.

Cutting capital costs by outsourcing services

Today, many product manufacturers, including those in medical products and devices, are recognizing the opportunity to change their revenue models from one-off sales to more attractive recurrent streams. This approach can also generate value for providers, allowing them to get out from under certain burdensome capital costs. Consider specialist services, such as catheterization, radiology, and pathology, in a generalist hospital. In many cases, an external party could run them more effectively. Imaging-product manufacturers have shifted away from simply selling equipment toward managed equipment-service contracts, in which they provide the equipment, maintenance, and staff for a fixed cost

at a guaranteed uptime or throughput. This structure reduces the burden on the hospital and ensures that patients receive the highest quality of care from specialist providers.

Certainly, the amount of untapped value in the healthcare-provider-services sector should be exciting for investors. But it's exciting for another reason as well: their investments could very well help to improve the quality of care, access to services, and patient experience—all at a lower cost for individuals, insurers, and governments. The pace of consolidation is accelerating. Investors who want to enjoy first-mover advantage should act soon to enter the right market niches and create new, hands-on strategies to unlock huge amounts of untapped potential.

[1] For more on the attractions of European healthcare, see Yair Erez, Justas Grigalauskas, Dima Podpolny, and Thomas Rudolph, "European healthcare—A golden opportunity for private equity," June 2017, McKinsey.com.

[2] For more, see *Health Care Services in Europe 2018,* Healthcare Business International, healthcarebusinessinternational.com.

[3] Numbers are based on information provided by the World Health Organization (2016), BMI Healthcare (2016), and McKinsey analysis.

[4] Numbers are based on information provided by the World Health Organization (2016), BMI Healthcare (2016), and McKinsey analysis.

[5] Nordic Capital press release, nordiccapital.com.

[6] Darragh Riordan, "Nordic capital makes 7x return on AniCura sale to Mars Petcare," *Real Deals,* June 11, 2018, realdeals.eu.com.

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Private equity operating groups and the pursuit of ‘portfolio alpha’

While this function has become ubiquitous at private equity firms, they have yet to adopt a standard approach.

Jason Phillips and Dhruv Vatsal

As private equity firms seek to boost investment returns, operating groups have become an increasingly prevalent feature of their organizations. Today, each of the top 25 funds (by *Private Equity International* rankings) has an internal operating group. Firms have expanded these groups, which focus on providing strategic direction and support to their portfolio companies, in part as a response to rising competition for acquisitions that has contributed to higher valuations. This proliferation of operating groups aligns with a broad philosophical shift among private equity investors from the historical "buy smart and hold" approach to "acquire, align on strategy, and improve operating performance."

To get insight into how private equity firms are using operating groups to support their investment strategies and create alpha in their portfolios, McKinsey conducts a regular survey, the latest of which concluded in the fall of this year.

The 2018 survey results reflect the strategic shift toward generating alpha and the increasing prevalence of operating groups within firms. In 2015, for example, operating groups spent 29 percent of their time focused on "monitoring and reporting" portfolio company performance, compared with 19 percent in 2018. Further, the focus on "driving measurable performance improvement" increased from 40 percent in 2015 to 49 percent in 2018. Respondents expect this area to continue to represent an increasing percentage of their activity and plan to expand their operating groups accordingly over the next three years to support this approach. Specifically, they indicated they would add former functional executives (56 percent of respondents), former consultants (54 percent), and former C-level executives (44 percent) to their internal teams.

During this same period, concentration on "work supporting broader change processes" has remained roughly constant (31 percent in 2015, compared with 32 percent in 2018).

While a smaller percentage of survey respondents in 2018 reported having a well-defined model, or playbook, for creating value (59 percent versus 65 percent in 2015), firms that have such models currently are using them more consistently across the portfolio (75 percent in 2018, up from 50 percent in 2015).[1] These findings suggest an emphasis on taking a more deliberate and consistent approach to value creation across the portfolio.

Our analysis also revealed significant variance in the size and composition of this function across firms. We found a minimal correlation between operating group team size and fund size as measured by assets under management (AUM) and fund number (Exhibit 1). Across the surveyed firms, one-third of respondents have five or fewer operating group members on their internal teams, and just 37 percent have more than ten professionals. Few firms, even those with more than $25 billion in AUM, have internal operating groups larger than 15 professionals. The once-common practice of building out large internal operating groups that effectively serve as internal consulting and implementation practices does not appear to be a priority among our respondents.

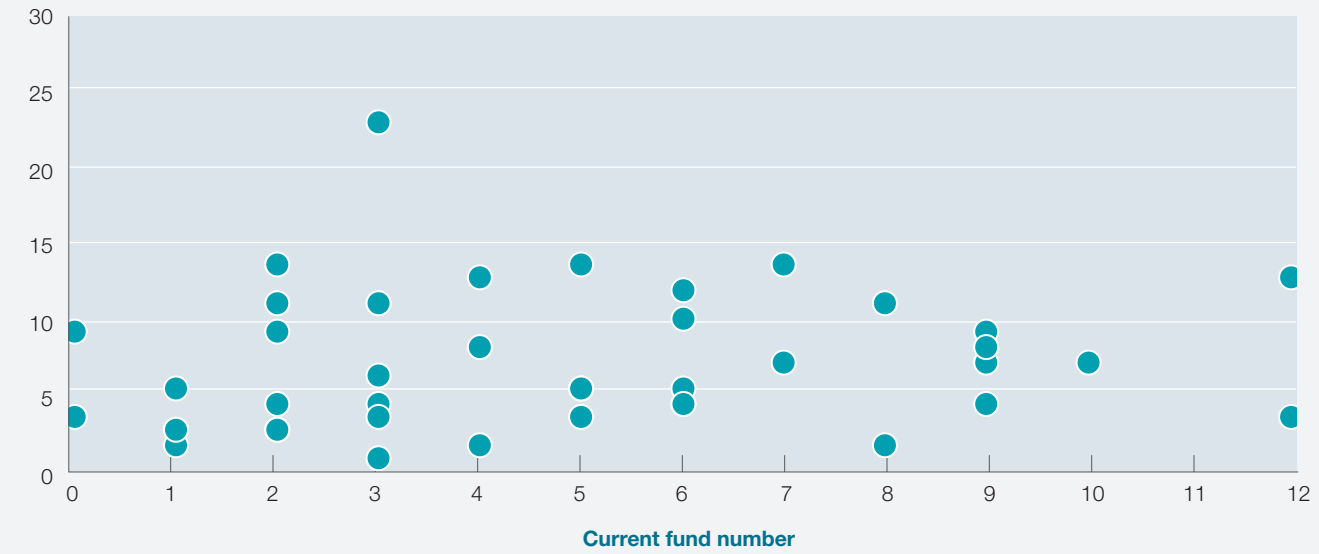
We also examined operating group composition as part of the survey. Of the 45 firms surveyed, 30 have operating groups that include both professionals working in a part-time, often ad hoc capacity (external operating group members), as well as professionals working in a full-time capacity as firm employees, or occasionally at portfolio companies (internal operating group members). The 15 remaining firms have internal operating groups exclusively.

External operating group members are typically former C-level executives and, to a lesser extent, former functional leaders (such as vice presidents or senior vice presidents). They often serve firms in an advisory role to identify and evaluate potential investments and provide CEO coaching and governance support to portfolio companies. These

Exhibit 1 **Assets under management (AUM) and fund number have no correlation to size of operating group.**

Note: Excludes four firms with operating groups with more than 30 professionals to preserve respondent anonymity.

Source: McKinsey 2018 Private Equity Operating Group Benchmarking Survey (Fall 2018), n = 45



Note: Excludes three firms with operating groups with more than 30 professionals to preserve respondent anonymity.

Source: McKinsey 2018 Private Equity Operating Group Benchmarking Survey (Fall 2018), n = 45

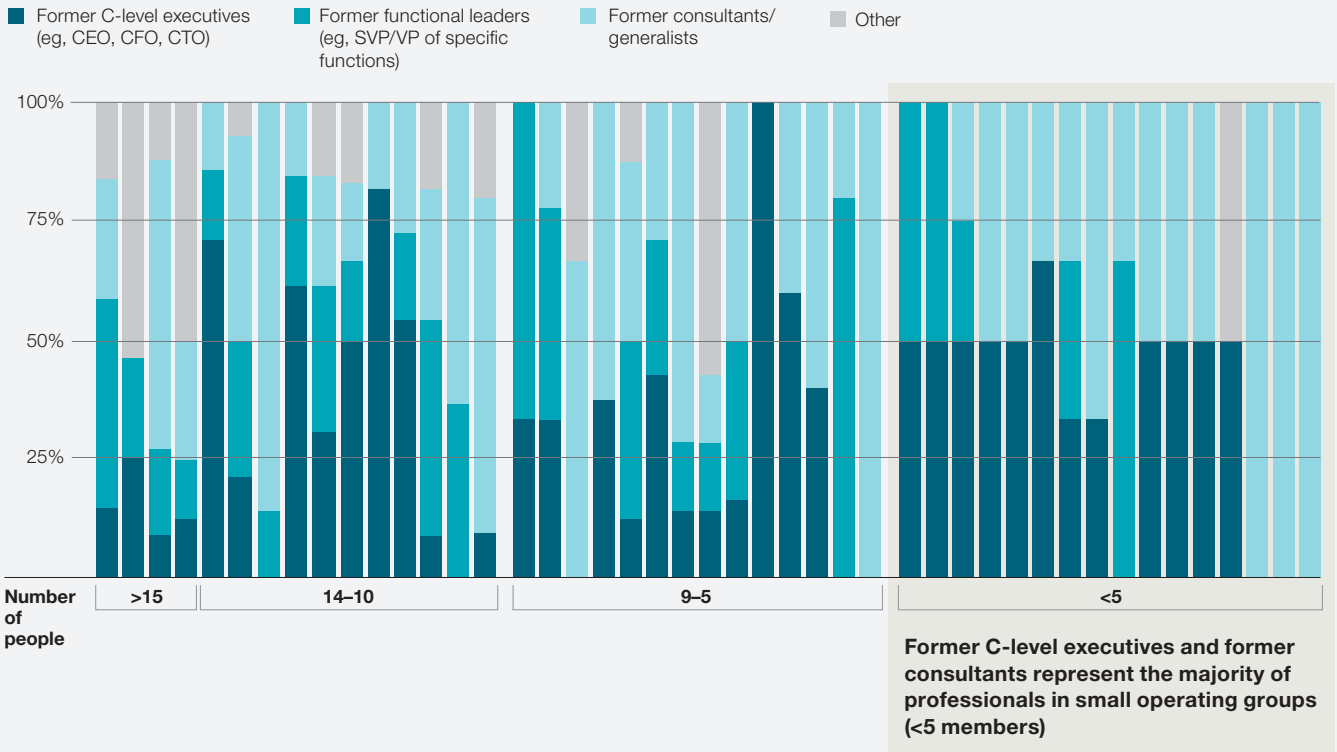
members are compensated for their board service and often have the opportunity to invest alongside the fund in deals they helped to find or complete. Survey respondents believe their external operating group members spend 30 to 40 percent of their time, on average, supporting the firm or its portfolio companies.

In contrast, internal operating groups comprise three types of professionals: former C-level executives, functional leaders, and former consultants. Fewer than half of the groups in our survey have more than half of their members from any one background; 11 groups are primarily former consultants, seven are primarily former C-level executives, and three are primarily former functional leaders. Five groups are split evenly between former C-level executives and former consultants. The majority of small operating groups (those groups with fewer than five professionals) are staffed primarily by former C-level executives and former consultants (Exhibit 2).

The survey also offered some insights into the evolution of operating groups in the coming years. Respondents anticipate that internal operating

Exhibit 2 **Operating groups primarily comprise three types of professionals, but the mix varies significantly.**

Composition of internal operating group: Prior roles, % of total internal operating group members



Source: McKinsey 2018 Private Equity Operating Group Benchmarking Survey (Fall 2018), n = 45

groups will continue to expand, particularly in midlevel roles such as vice president and principal. Firms are looking to a talent pool of former functional leaders and consultants to fill out their teams as opposed to leaning more heavily on former C-level executives. This composition suggests that firms plan to engage more actively with their portfolio companies in the coming years. In contrast, respondents indicated that external operating groups are slightly more likely to recruit former C-level executives for future staffing needs, reflecting in part an increased focus on sourcing proprietary deals and expanding their bench of potential portfolio-company board members. The survey findings and industry trends suggest that the size and composition of internal operating groups will continue evolving in the coming years. For this reason, firms will likely see heightened competition for qualified candidates, so attracting and retaining talent for operating groups could take on added importance. ■

[1] One significant difference between the two surveys was the number of respondents, with 45 firms participating in 2018, compared with 20 in 2015. The collected responses from the 2018 survey came from companies with a range of fund sizes, geographies, and operating group models.

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The authors wish to thank Ryan Ahern for his contributions to this article.

The continued rise of South Korean private equity

Solid returns and optimistic forecasts have made South Korea an increasingly attractive market for investors.

Wonsik Choi, Boyoung Kim, Richard Lee, and Vivek Pandit

Ever since South Korea reopened itself to private equity in 2005, the market has demonstrated robust growth as measured by total investment and returns. Over the past decade, private equity funds have allocated nearly $100 billion in capital. Further, acquisitions by both global and local private equity firms grew from 44 in 2005 to 342 in 2016. During that same period, the yearly capital committed to private equity funds increased to $57.1 billion, from $8.4 billion, raising private equity's share of total investment of M&A in South Korea to 25 percent in 2016. As impressive, private equity returns, holding steady at around 20 percent a year, have far outstripped the public equity markets.

By most measures, the country's private equity market, the third largest in Asia, is poised for continued growth. Yet to date, South Korea private equity hasn't been high on the list of global investors. Its relative obscurity could be due to the concentrated nature of its market, a prevalence of large conglomerates that may have overshadowed promising investment opportunities, and a lack of knowledge about certain industries. To be sure, the market has a high level of capital in search of acquisition targets, a shortage of acquirers to ensure timely exits, and a lack of experienced management talent to spearhead turn-arounds. Still, South Korea's private equity market is making progress despite such concerns.

Recent McKinsey research on South Korea's private equity market highlights factors that have been responsible for its steady returns and indicators of future growth. Our in-depth analysis includes fund performance, investment strategies, and economic contribution of the private equity investment nature of the performance. As global investors contemplate entering the market, they should educate themselves on where opportunities lie. Rising interest in South Korea will increase competition, meaning that private equity firms may need to evolve their investment strategies and models.

South Korean private equity on a tear

Since 2005, when South Korea's regulatory changes first allowed private equity fund setup, the market has been on a tear. From 2005 to 2017, private equity firms in South Korea invested in more than 870 companies. Private equity has represented a broad-based source of equity capital, across both sectors and company sizes. A temporary setback due to the global financial crisis has been followed by five years of rapid expansion: from 2013 to 2017, more than $54 billion in equity capital entered the market, equal to 62 percent of the accumulated total since 2005 (Exhibit 1). In 2015 alone, private equity investments totaled $17.6 billion, concentrated primarily in buyouts. Although total investments fell the following year, 2017 saw a rebound to $12.2 billion.

High returns across all asset sizes and types

In tracking results by investment periods, private equity firms have generated a return of 1.4 times invested capital. Of the $53 billion that has been invested from 2005 to 2014, $34 billion has exited so far—approximately 60 percent of the total—at a value of $47 billion (Exhibit 2). From 2005 to 2014, exit multiples of money[1] were consistent at 1.3 to 1.5, with a holding period of three to three-and-a-half years.

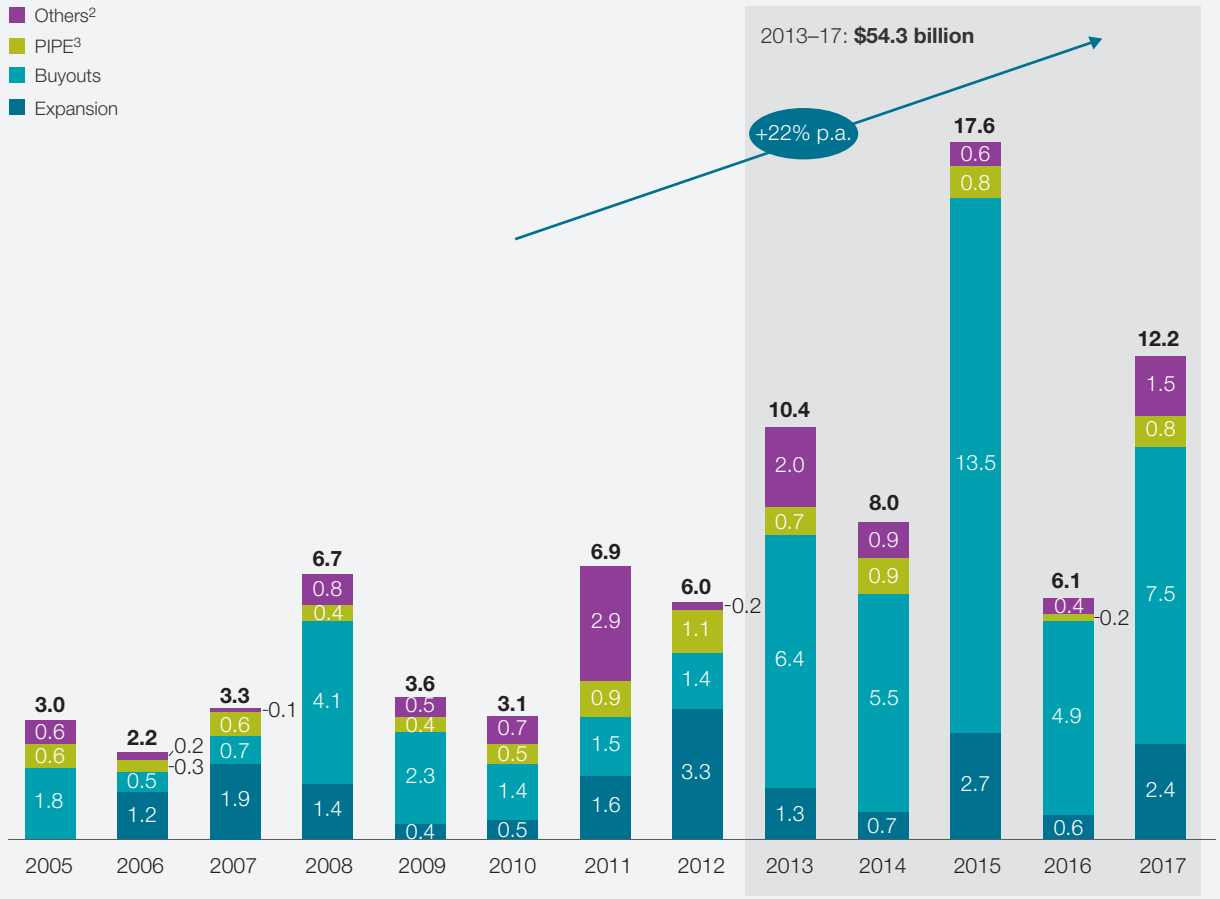
Since 2005, private equity firms in South Korea have achieved an average internal rate of return (IRR) in excess of 20 percent and healthy exits. Smaller investments and fewer exits caused some variation in private equity returns before 2010, but annualized returns have held steady for the past five years, at just above 20 percent. By contrast, the KOSPI Index achieved 1 to 3 percent annualized returns since 2013.

Returns and holding periods varied significantly by strategy. Buyout investments generated more attractive returns compared with nonbuyout deals across all deal sizes in excess of $50 million. The greatest gap was in deal sizes greater than $500 million, where buyouts generated twice the returns of

Exhibit 1

Private equity is a stable source of equity capital, contributing more than $89 billion since 2005.

Total private equity investments,[1] $ billion



Note: Figures may not sum, because of rounding.

[1] Based on deal closing date.
[2] Includes mezzanine/pre-IPO, turnaround.
[3] Private investment in public equity.

Source: AVCJ; McKinsey analysis

nonbuyout deals—22 percent compared with 11 percent. These figures are heavily influenced by the large deal for South Korean beer company Oriental Brewery.

The preferred private equity strategy was to hold investments for two to five years; this category made up 56 percent of total capital exited (Exhibit 3). The average annual returns achieved at exit varied significantly within this group: exits after two to three years generated returns of 35 percent compared with 22 percent for exits of five to six years. At the opposite end of the spectrum, investments held for more than seven years expectedly produced returns of just 3 percent.

Exhibit 2

Of the approximately $53 billion invested from 2005 to 2014, approximately $34 billion has exited at a value of approximately $47 billion.

Investment period	**Private equity (PE) Investment,**[1] $ billion	**Exits, cost basis,**[2] $ billion	**Exits, value basis,**[2] $ billion	**Exits to entry (value/cost),** multiples	**Holding period,** number of years
2005–08	15.1	7.4	10.3	1.4	3.0
2009–11	13.3	10.6	16.3	1.5	3.6
2012–14	24.4	15.8	20.3	1.3	3.5
Total, 2005–14	**52.8**	**33.8**	**46.9**	**1.4**	**3.4**

Note: Figures may not sum, because of rounding.

[1] PE investment samples are based on 590 PE investments from FY 2005–14.
[2] PE exit samples are based on 460 PE investments exited from FY 2005–14.

Source: AVCJ Research; Kisvalue; McKinsey analysis

Strong returns across industries

Private equity investments were distributed across industries, with 75 percent of capital concentrated in consumer, industrials, financial services, and infrastructure (Exhibit 4). Consumer, industrials, and financial services had exits for 70 percent of invested capital, and the first two industries generated returns of around 25 percent. Private equity firms are interested in the consumer and financial-services industries because of the steady cash flow, demographics, and domestic consumption. Industrial companies are attractive because they present private equity firms with ample opportunity for operational improvement and restructuring balance sheets to improve returns to equity.

Increased deal sizes

To date, a sizable majority of private equity investments have gone to "big-ticket investments"—defined as investments with more than $100 million in average deal size. Indeed, since 2013 this segment has attracted the bulk of capital, sometimes garnering more than 90 percent of total investment in a given year. The average deal size peaked at $214 million in 2015, when big-ticket transactions drew 92 percent of all private equity investment.

The increase in average deal size is also caused by the industry landscape in South Korea. Companies with more than $500 million in annual sales account for 57 percent of total investments by value since 2005, a trend that has held fairly steady since 2005. This category of investment requires general partners to adopt an active-ownership operating model. Private equity's ability to source and close private deals depends on strong relationships with conglomerates so that executives viewed these firms as the first choice of divestiture for noncore assets.

With investments in small and medium-size corporations, which made up 37 percent of all deals by value, private equity firms tended to adopt a lean operating model. In these deals, fund managers used their proven strength and ability to help these companies scale quickly, in part by installing a professional management team to implement the strategy and systems to enable operational excellence. Prior to being acquired by private equity firms, South Korean companies have often selected managers with whom they have close personal relationships. In contrast, private equity firms typically assemble experienced management teams and align talent to sources of value, performance management, IT systems, and governance.

Increased interest from government pension funds

South Korea's private equity market is forecast to continue its recent trajectory. In addition, institutional investors are seeking to diversify investments by placing an increasing share in private market alternatives. Public pension funds, the largest category of limited partners, have expressed a desire to meet increasing liability gaps with returns from private markets. Further, the continued interest of limited partners in private markets is fueled by the muted outlook for public markets. McKinsey research suggests that limited partners are facing the prospect of a sustained low-return environment in public markets over the next 20 years. With slow growth, US equity returns could

Exhibit 3

Buyouts produced the most attractive returns across most deal sizes, especially those in excess of $500 million.

Average of annual returns realized at exit[1]

x.x Holding period, number of years

Private equity investment deal size, $ million	**Buyout returns,** 2005–17, %		**Nonbuyout returns,** 2005–17, %	
501+	22	4.4	11	5.1
101–500	17	4.6	16	4.3
51–100	15	3.6	6	3.9
<50	27	2.9	38	2.9
Average		**3.7**		**3.3**

[1] Average of 310 exited samples that disclose transaction amount both in year of acquisition and year of exit between 2005 and 2017; excluded deal size of less than $5 million.

Source: AVCJ Research; McKinsey analysis

decrease by up to 390 basis points and fixed-income returns by up to 590 basis points. In a growth recovery scenario, US equity returns and fixed-income returns could decline by up to 240 and 490 basis points, respectively.[2]

South Korea's National Pension Service, for example, has steadily diversified its holdings beyond fixed-income investments, with stock and alternative investments making up a growing share of its portfolio. From 2007 to 2017, alternative investments, including private equity funds, increased 28 percent.

The rise of private equity as an exit route

Notably, as the private alternatives market grew over the past decade, private equity firms accounted for an increasing share of buyers in exits. In the 2005 to 2008 period, nearly 75 percent of exits were sales to strategic investors, while private equity made up 11 percent. By 2017, strategic sales had dropped to less than 50 percent, as deals between private equity firms more than doubled, to 23 percent. This trend was emblematic of an active stance of private equity as investors, a more robust market, and quality of asset being sold.

Exhibit 4 **Consumer and financial-services industries are of interest to private equity firms.**

	Private equity (PE) investments,[1] 2005–14, $ billion	**Exits, cost basis,**[2] 2008–17, $ billion	**Exit vs investment,** %	**Returns where exited,**[3] 2008–17, %	**Holding period of deals exited** 2008–17, number of years
Consumer	10.7	7.5	70	24	3.4
Industrials	9.8	7.2	73	25	3.1
Financial institutions	9.5	6.5	69	14	4.9
Infrastructure[4]	8.9	3.7	42	27	3.3
Tech, media, and telecommunications	4.5	2.0	44	16	4.0
Electronics	4.4	2.0	46	19	3.6
Global energy and materials	2.9	2.8	99	13	3.0
Healthcare	1.3	1.0	76	36	3.2

[1] PE investment samples are based on 590 PE investments.
[2] PE exit samples are based on 460 PE investments exited.
[3] Excluded outliers with higher than 200% realized return per annum.
[4] Including transportation, travel, and logistics.

Source: AVCJ Research; Kisvalue; McKinsey analysis

Four factors fueling private equity's rise

The recent trajectory of the private equity market in South Korea has been shaped by several factors.

1. Public markets have underperformed significantly

While private equity funds in South Korea grew from 2005 to 2017, the country's public capital market took a different path. Prior to the financial recession, the public markets served as the largest sources of equity capital. Since 2012, initial public offerings and secondary public offerings have slowed considerably, allowing private equity investments to become the primary source of equity capital.

The KOSPI Index was highly dependent on the performance of Samsung Electronics, which accounted for 30 percent of its market capitalization. Samsung's incremental growth from 2012 to 2016 meant that the KOSPI achieved minimal growth until Samsung's share price rose more recently thanks to a huge demand for semiconductors in 2017. This market's reliance on large companies mirrors South Korea's economy as a whole. Currently, the top 50 conglomerates and other large companies account for more than 60 percent of the country's GDP.

2. First-generation owners are exiting via private equity

South Korea has one of the highest inheritance taxes in the world: an inheritance tax of 50 percent and a progressive tax for the largest shareholders of 65.0 percent, compared with an average of 26.3 percent for Organisation for Economic Co-operation and Development (OECD) countries. As the family owners of these businesses contemplate their succession options, private equity has emerged as a more attractive and lucrative alternative. In 2017, Affinity Equity Partners, for example, acquired a 63 percent stake in Lock & Lock for $561 million.[3]

3. Conglomerates divest assets due to regulatory shifts

Recent regulatory changes have forced conglomerates and chaebol to reduce their ownership of unlisted companies with significant intragroup business and to divest affiliates that are outside their core business. For this reason, Hanwha Group sold Hanwha S&C, an IT-solutions company, to STIC Investments in 2017. In addition, companies have been selling businesses to raise capital: Hyundai Heavy Industries dealt its entire stake in subsidiary Hotel Hyundai to South Korean private equity firm Hahn & Company in 2017.

4. Many multinational companies have exited South Korea

Recent developments suggest that conglomerates (both local and multinational companies) and chaebol may provide investment opportunities via divesture or carve-outs in the coming years. A few multinational companies decided to sell businesses in South Korea due to the deteriorating financial performance of the parent company. In 2015, after 16 years of business in the country, Tesco sold Homeplus for a record $6 billion buyout deal, the biggest single deal in Asia. In 2014, Tyco sold ADT Caps, its security-services business. Visteon (owned by Ford) exited Halla Vesteon Climate Control due to its flagging financial performance.

Private equity firms are generating superior growth

Private equity investment portfolios have also achieved significant returns: on average, the top line of portfolio companies grew 38 percent in revenue from acquisition to exit, or annual growth of 11.2 percent over an average three-year holding period. Operating profit margins also grew 28 percent, meaning that most portfolio companies increased their enterprise value while maintaining the earnings before interest, taxes, depreciation, and amortization (EBITDA) multiples.

In general, private equity firms' portfolio companies showed impressive growth in both revenues and operating profits. If we analyze each cohort's growth compared with companies not backed by private equity, portfolio companies outperformed their peers in seven out of the ten years from 2005 to 2014 in revenue growth, and in eight out of the ten years in operating-profit growth.

Companies backed by private equity have also made a significant contribution to the economy in the form of increased employment. McKinsey analyzed 430 portfolio companies and found an interesting pattern in their human-resources planning. Since private equity funds in South Korea have focused on performance and growth, they have added employees on a similar trajectory to that of companies not backed by private equity. This pattern contradicts the narrative that private equity firms in South Korea are interested primarily in reducing costs and selling off their portfolio companies rather than pursuing growth.

On profitability, private equity portfolio companies achieved an increase in profit margins similar to that of companies not backed by private equity. Two factors contributed to this trend.

The ability to attract superior talent

Private equity firms have the resources to hire and install more experienced executives and give them authority and autonomy. MBK Partners, for example, hired Samsung senior executives to helm Coway, one of its portfolio companies, and the Carlyle Group lured executive talent from LG to run ADT Caps. Private equity firms can also offer incentives for performance targets that help to align senior management with shareholder interests. These attributes are rare for executive positions in South Korea—and a major differentiator for private equity funds in their quest to attract the best executives.

A focus on operational expertise

Similar to KKR Capstone and TPG Capital, private equity firms in South Korea have gained more expertise and experience in hands-on operational excellence. Larger firms such as Hahn & Company and MBK have established operating arms to assist the management teams of their portfolio companies in specific areas. This model offers private equity firms an additional lever to create value beyond financial leverage.

What's next for South Korean private equity firms

As global investors become more aware of opportunities in South Korea, the competition for attractive deals will likely increase significantly. Heightened interest from global megafunds—for example, KKR ($9 billion), Baring ($7 billion), and TPG ($5 billion)—are pushing EBITDA multiples higher, especially in auctions. Carlyle, KKR, and TPG have all established a dedicated presence in South Korea and are expanding their investment teams.

Thanks to South Korean private equity's robust return profile and healthy exit track record, the market represents a viable channel for limited partners looking to allocate their capital. The resulting influx of funds has fueled the growth of South Korea's two largest private equity firms—MBK and Hahn & Company. Since 2012, these firms have garnered a substantial share of fundraising, approaching 60 percent of all private equity capital raised by South Korean funds in 2013 and 2016.

As a result, private equity firms are starting to move beyond traditional leveraged buyouts into other strategies. MBK, for example, recently established a special-situations investment fund. Since these new approaches require a different set of knowledge skills, a fund's success will be dictated by its ability to attract top talent to augment existing capabilities.

What it will take to succeed in South Korea

The spate of megadeals from 2015 to 2017 has further turned up the heat. Increased competition for acquisitions in South Korea, due in part to heightened interest from global megafunds, is pushing EBITDA multiples higher, especially in auctions. Private equity firms can respond by building capabilities in the following areas:

Ability to execute the real turnaround and add value

Private equity firms must find additional sources of growth to justify elevated prices. To remain

competitive in leveraged buyouts, funds should consider building their expertise and know-how on executing business turnarounds and generating more value through growth.

Attracting top talent

Recently, private equity firms have begun to demonstrate their knowledge of a particular sector to notch multiple wins, both through managing portfolio companies and expanding into other parts of the value chain. Sector-specific expertise will become even more important in the coming years.

New deal sourcing beyond auctions

Increasingly, a private equity firm's network and ability to identify proprietary deals are critical. With South Korean private equity capital largely focused on traditional leveraged buyouts, firms can expand their network by creating enticing propositions for overlooked pockets of business or establishing lines of communication with conglomerates that don't want to pursue public auctions.

Expanding investment strategies beyond the buyout

Private equity firms are starting to extend past traditional leveraged buyouts into other strategies, such as special situations. Since these new approaches will require a different set of skills, a fund's success will be dictated by its ability to attract top talent to augment existing capabilities. In addition, a few other funds are rumored to be planning an expansion of their investment strategy in South Korea into credit and distressed funds, including special situations in Korea.

The impressive track record of private equity in South Korea over the past dozen years has created an attractive investment climate. That in turn has drawn more investors and funds to the market—developments that call for new strategies to identify promising deals. Private equity firms that can adapt their approach could be poised for continued success. ■

[1] Defined as the amount of money returned divided by the amount invested for that particular investment.

[2] *A routinely exceptional year: McKinsey global private markets review*, February 2017, McKinsey.com.

[3] Tomas S. Noda III, "Asia digest: Affinity Partners invests $561m in Lock & Lock; KKR buys Australian clinic," *Deal Street Asia*, August 30, 2017, dealstreetasia.com.

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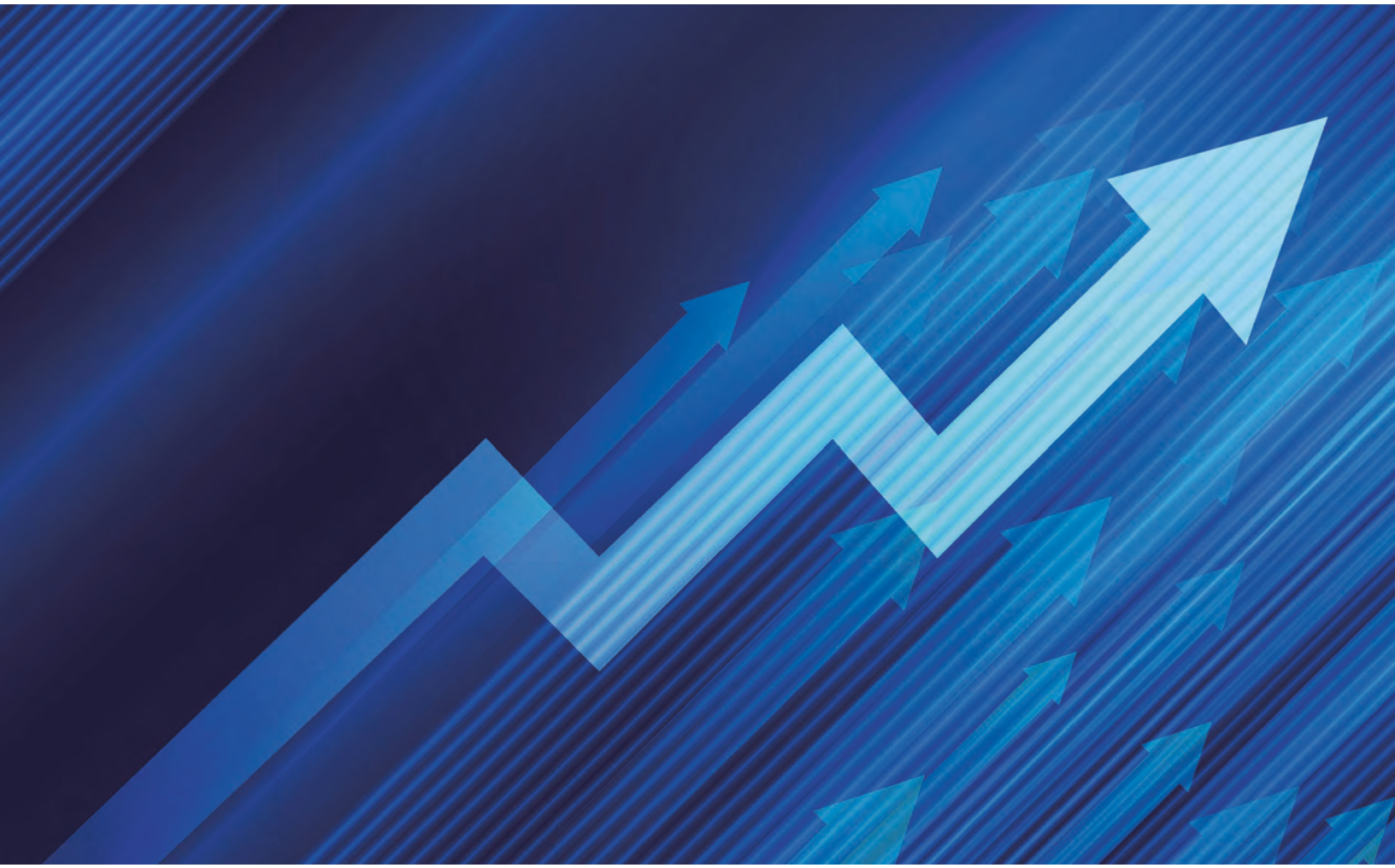
Private equity exits: Enabling the exit process to create significant value

Private equity investors selling their portfolio companies can capture more value by focusing on three best practices.

Alastair Green, Wesley Hayes, Laurens Seghers, and Eyal Zaets



The last critical step of the private equity (PE) investment process, the exit, can greatly affect the final return on investment. Even after years of doing all the right things—including taking a proactive approach to ownership, aligning performance incentives, and being thoughtful about M&A—a poorly planned or executed exit can turn a good deal into a mediocre one.

Moreover, regardless of the exit strategy, and despite rising multiples, exits are becoming more challenging. Buyers are more sophisticated—and more demanding—than ever. Rapid technological change makes it tough for buyers and sellers to reach a shared understanding of risks as well as potential sources of value. And many owners struggle to create value past the initial one to three years of the holding period, during which the primary value levers are pulled. Together, these challenges make the exit process trickier to successfully execute and lead to a widening spread between strong and weak exits.

Despite the complicated environment, PE investors can overcome these obstacles and achieve exit excellence through three distinct actions. First, they should perform a readiness scan 18 months before the intended time of exit. Second, to demonstrate further potential to possible new owners, they should instruct management to focus on value-adding performance improvements that continue to create value while preparing for the exit and post-transition stages. This process may include the somewhat counterintuitive step of leaving some value-creation opportunities on the table for potential buyers to execute. Finally, they should also prepare to disclose and actively manage unpleasant surprises and give forthright answers to buyers' difficult questions. Investors that take this advice may drastically improve their exit performance, both by reducing the risk of exit-process derailment and by helping to realize the full potential value of the transaction.[1]

Exits: The most critical—and sometimes the most difficult—step

For the past four years, the global value of PE exits surpassed $500 billion per year. In 2017 alone, PE firms completed 2,475 exits.[2] As the number of exits grows and the market remains hot, the list of challenges has increased, making successful exits tougher and more complex:

As multiples get higher, so does the bar for a successful exit

In 2017, overall M&A multiples in the United States, including PE multiples for secondary buyouts, remained at their highest levels in more than a decade at 10.5, compared with 9.4 in 2014.[3] In such an environment, deals are expensive and sellers expect increasingly better terms.

Buyers have become more sophisticated and methodical and have expanded their institutional understanding

As the PE industry has matured, buyers are seeing fewer deals that are the first of their kind. Often, deal teams that specialize in particular industry verticals are intimately familiar with the space and the companies that operate within it. This exhaustive knowledge has made the typical due-diligence process

Rapid technological change makes it tough for buyers and sellers to reach a shared understanding of risks as well as potential sources of value.

more detail oriented. During the sale process, most teams now focus on building a deep understanding of a company's operations, which leads to challenging questions for management.

All sectors face ambiguity related to technological disruption

Industry 4.0, for example, is changing manufacturing, connected cars are changing the automotive world, and retail is dealing with the challenge of digital natives such as Amazon. In the future, additive manufacturing looms large for manufacturers and distributors alike. Often, potential buyers and sellers or company management have divergent perspectives on how future scenarios will play out, making it hard to reach a common understanding about not only the true risks to the business but also the potential sources of value.

Management becomes distracted in the back end of the holding period

In the beginning of the holding period—generally the first two to three years—excitement to kick-start the value-capture process is high. Often, management rolls out large performance-transformation programs, such as turning fixed costs into variable ones, reducing overhead expenses, and making commercial improvements in activities such as pricing. In the following years, and as the company moves toward an exit, many owners shift focus toward stabilizing the earnings pattern or strategic M&A. This change carries the risk of reducing the energy and ambition for fundamental business improvement—or to put it differently, during the second wave, owners sometimes stop pulling those important value-creation levers.

For many investors, these hurdles have been difficult and costly to surmount.

Some exits completely derail, some do not fully achieve market-conforming multiples, and still others exceed expectations—all within the same industries and market environments. Of course, myriad factors are at play in these instances, such as the underlying dynamics of the subsegment and the market position of the company. Yet in our experience, successful sellers tend to adhere to a few common best practices that increase the chances of a successful exit.

Three best practices for exit excellence

At the beginning of every deal, best-in-class PE firms have a vision for both the exit route and timing, which they continue to refine. Indeed, successful sellers force themselves to regularly revisit this exit vision—often every six months—through the duration of the holding period, as the constellation of influencing factors is always in flux.

In addition to frequent checks against the original exit strategy, the most successful PE investors undertake three critical activities that lead to exit excellence.

1. Perform a readiness scan 18 months before the exit

As part of exit preparation, successful sellers execute a readiness scan of the company and the exit environment 18 months prior to the anticipated exit and refresh it a year later. The initial scan is close enough to the anticipated exit that owners can have market and cycle visibility, and it is also still far enough out to address potential weaknesses in the investment story and establish a meaningful performance track record. Say a scan uncovers production delays in the launch of a new product or an increase in customer churn. Over the course of 18 months, it is reasonable for management to fix those problems and get performance trending in the right direction before these issues might turn off potential buyers.

The readiness scan should address a few key questions:

- Is the proposed timing still right? What is the expected near-term market situation and performance trajectory? Is there noise in the market about the company's industry? Are exit valuations in the sector attractive, and how are they trending?

- Is the originally anticipated exit route—a dual listing, IPO, or trade sale, for example—still valuable and still the best path forward?

- Beyond the sources of value identified upon acquisition and in the first one or two years of the holding period, what other performance improvements might lead to capturing more value? What performance milestones must be reached to confidently engage in discussions with potential buyers or investors?

- Does the company have a healthy pipeline of value-creation initiatives that could extend after the sale to the next owners? And is the management team ready to commit to executing those initiatives after the change of ownership?

To perform the readiness scan, many of the most successful PE investors create an exit committee, which often consists of the fund's investment committee members, the responsible deal team, and, if applicable, the head of portfolio operations and other members of the operating team.

2. Focus management on continuing to capture value while preparing for the exit and post-transition process

Creating value through performance improvements in the first few years of the holding period is critically important, but the best owners continue to push hard on value creation throughout the entire period. Indeed, as potential acquirers look closely at the final 12 to 18 months prior to exit, management must ensure that the company demonstrates a track record of performance improvement that can be carried forward to create future value.

The ability to further improve performance will depend on current market conditions and, of course, on what value levers have been pulled. Consider, for example, a company that has captured all potential upside from transactional pricing optimization in the initial one to three years of the holding period. Management may then shift to consider additional value-based pricing opportunities for particular client situations or services. Similarly, when a company has already streamlined its supplier base and renegotiated major procurement contracts, it might consider ways to remove risk from its supplier base.

While the main focus of the management team should be on pulling the remaining value levers that result in immediate impact, it should also work to identify additional long-term ways to create value. Transactions attract buyers only if buyers are convinced that they will be able to add value throughout the upcoming ownership period. That means to motivate buyers, sellers must leave a few clear, strategic options and performance-improvement opportunities on the table.

Sellers should maintain this sometimes counterintuitive mind-set throughout the entire ownership period and develop concrete, actionable strategies that a new owner can execute from day one. Sellers and management should also be prepared and willing to openly discuss why these opportunities have not been pursued. Perhaps market timing was not quite right for certain opportunities, for example, or the company has not yet attained the required level of technology maturity or scale.

3. Prepare management to address potential problems and give forthright answers to buyers' difficult questions

Obviously, investors are disconcerted by unpleasant surprises such as poorly explained risks. Nasty surprises often crop up in nonoperational matters such as substantial unfunded pension liabilities, pending litigation or labor disputes, pending changes in regulation, or particular exposure to certain macro risks. Also, sellers must be diligent in their analysis of how a company is positioned in its market and realistic about value-creation potential. For fear of souring a potential sale, many PE investors are not as forthcoming as they should be. In our experience,

however, buyers almost always uncover such material issues, and the more sellers and company management are prepared to talk through these, the better. So just as an auditor should analyze and reveal the good and the bad to a client as soon as they are uncovered, sellers—and company management—should disclose issues to potential buyers as quickly as possible and preempt their questions.

For example, in its first sale attempt, one PE-held building-materials company that supplied products only to a specific niche construction segment failed to determine its exact exposure to fluctuations in the overall construction cycle. At that moment it was in a favorable position, with more fundamental headroom for near-term growth than the broader construction industry. Despite this advantage, the failure to disclose its full risk exposure to potential investors killed the potential transaction. In its second attempt, however, the company's management spent a significant amount of energy appropriately articulating the nature of the cyclical risk and its underlying drivers. This effort led to a more informed buyer and, ultimately, to a closed deal.

In addition, certain operating or back-office issues, often related to IT, are recurring concerns for strategic buyers. Problems with IT integration and past underinvestment have proved to be ordeals during many integration efforts. Any signs of potential IT integration issues tend to either deter buyers or substantially lower valuations.

By putting themselves in potential buyers' shoes and by taking care of these issues—even if doing so might postpone the exit—sellers are doing the right thing. It both takes the burden off the buyer, which now doesn't have to deal with potential problems, and it tends to reflect favorably in a buyer's valuation of the company. Further, it demonstrates management's ability to deal with complicated matters.

Exits are rarely easy. But a concerted effort to improve exit performance—one focused on readiness, continuing value creation, and transparency—can ultimately have a huge impact on returns. And of course, the best possible exits set up new investors to continue to create value.

[1] In the past five years, top-quartile transactions by cash-on-cash returns tended to achieve up to two times the additional cash-on-cash returns over third-quartile exits in the same industry. Private equity professionals and industry experts consider the exit process to be a critical—yet not sole—factor contributing to this discrepancy. Source: Preqin Transaction Database, Preqin, accessed April 2018, preqin.com.

[2] For more on trends in global private markets, see *The rise and rise of private equity,* February 2018, on McKinsey.com.

[3] Joshua Mayers, "The state of the US PE industry in 13 charts," PitchBook, October 24, 2017, pitchbook.com.

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